WPP 001/4 IHC 3,9 g

engine

2. Edition

VA 4/100 H 1100 CR 71 0 460 304 149

Setting of the pointer at a stroke of 1 mm in

relation to outlet "A".

Nozzle-and-holder assembly 1 688 901 020 (172 + 3 bar)

6.75 supersedes

company IHC D 239

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers Test Intructions and Test Equipment

VDT-WPP 161/4 B Pre-setting see reverse side

Pre-stroke setting

0.5 mm ± 0.04

1.	Settings	rev/min	Settings		Charge-air press kp/cm	Difference in delivery cm ³
11	Timing device travel	800	3,2-4,0	mm		
12	Supply pump pressure	800	4,8-5,3	kp/cm²		
13	Full-load delivery without charge-air pressure	700	63,0-64,0	cm ³ /1000 strokes		2,5
	Full-load delivery with charge-air pressure			cm ³ /1000 strokes		
1 4	Idle speed regulation	350	12,0-18,0	cm ³ /1000 strokes		3,0
15	Start	100	mind.85,0	cm ³ /1000 strokes		
16	Full-load speed regulation	1130	31,0-39,0	cm ³ /1000 strokes		

2. Test Sp	ecificati	ONS Checking values in brackets	000	050 4070
2.1 Timing device	rev/min	260-420(230-450)	800	950-1070
	mm	Start	(2,9-4,3)	4,7-5,4(4,4-5,7)
2.2 Sweets nume	10.1(m)D	200	800	1100
22 Supply pump rev/min	kp/cm²	1,7-2,2(1,5-2,4)	(4,6-5,5)	5,9-6,4(5,7-6,6)
		500		1100
Overflow delivery	rev/min cm ³ /10 s	55-100(40-110)		55-100(40-110)

2	3	Fuel	delive	ries
٠	J	L OC:	CHINE	1163

Speed control lever	Delivery lever	rev/min	cm ³ /1000 strokes		Charge air pressure kp/cm²
End stop	Fuli	1180-1250 (1160-1270)	0		,
		1130 1050 700	71,0-74,0	(30,0-40,0) (70,0-75,0) (62,5-64,5)	
		500	61,5-64,5	(60,5-65,5)	
	Stop	1100	0		
idle stop	Full	400-450 (380-470)	0		
		350		(11,0-19,0	
	Start	100	mind.85,0		
End stop		220-300		•	

Angle to the stop prace	Pre-setting dimensions
Pump $\alpha = 25 \pm 4^{\circ}$ $\beta = 40 \pm 8^{\circ}$ $Y = 30 - 8^{\circ}$ $\delta = 40 + 15^{\circ}$	Pump Dimension IV = 2,0 mm Dimension V = 24,6 mm

WPP 001/4 IHC 3,5 b 1

4. Edition

En

VA 4/100 H 1250 CR 8-1 (P) $$^{\circ}$$ Setting of the pointer at a stroke of 1 mm in relation to outlet "A".

supersedes 2.78 company IHC pagine D 206

Nozzle-and-holder assembly 1 688 901 020 (172 + 3 bar)

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers Test Intructions and Test Equipment

VDT-WPP 161/4 B

Pre-stroke setting

 $0,5 \text{ mm} \pm 0,02 (\pm 0,04)$

1. Settings	rev/min	Settings		Charge-air press kp/cm ²	Difference in delivery cm ³
1.1 Timing device travel	800	2,5-3,3	mm		
1 2 Supply pump pressure	800	5,2-5,7	kp/cm²		
1.3 Full-load delivery without charge-air pressure	800	62,5-63,5	cm ³ /1000 strokes		2,5
Full-load delivery with charge-air			cm ³ /1000 strokes		
pressure 1.4 Idle speed regulation	400	22,0-28,0	cm ³ /1000 strokes		3,0
15 Start 196 bar	100	mind.85,0	cm 1/1000 strokes		
1 6 Full-load speed regulation	1300	21,0-29,0	cm ¹ /1000 strokes		

2. Test Sp	ecificatio	S Checking values	s in brackets		
2.1 Timing device	rev/min mm	Start 300-450	600	800 1 3,6-4,6(3,3-	000 1100-1250 4,9)4,7-5,4(4,4-5,7)
2.2 Supply pump	rev/min kp/cm²	200	1.9) (5	800 1 5,0-5,9)6,8-7,	250 3(6,6-7,5)
Overflow delivery	rev/min cm³/10 s	500 55-100(40-11)		1	250 0(40-110)
23 Fuel deliveries					lan and a second to tank
Speed control lever	Delivery lever	rev/min	cm ³ /1000 strokes		Charge-air pressure kp/cm ²
End stop	Full	1320-1380 (1300-1400) 1300 1230-1260 1200 800 500	0 Start 62,5-65,5 54,0-57,0	(62,0-64,0)	
Idle stop	Full	480-550 (460-570) 400	0	(21,0-29,0)	
End stop	Start	100 220-300	mind.85,0	•	

Angle to the stop-plate	Pre-setting dimensions		
Pump $\alpha = 25 \pm 4^{\circ}$ $\beta = 40 \pm 8^{\circ}$ $\gamma = 30 - 8^{\circ}$ $\delta = 60 \pm 8^{\circ}$	Pump Dimension IV = 3,6 mm Dimension V = 25,0 mm		

WPP 001/4 IHC 3,5 1

4. Edition

VA 4/100 H 1150 CR 8-3

Setting of the pointer at a stroke of 1 mm in relation to outlet "A".

Nozzle-and-holder assembly 1 688 901 020 (172+3 bar)

Pre-stroke setting

0.5 mm $\pm 0.02 (\pm 0.04)$

supersedes 7.79

company

IHC engine D 206

All test specifications are valid for **Bosch Fuel Injection Pump Test Benches** and Testers

Test Intructions and Test Equipment

VDT-WPP 161/4 B

1. Settings	rev/min	Settings		Charge-air press kp/cm ²	Difference in delivery cm ³
1.1 Timing device travel	900	3,7-4,7	mm .		
1 2 Supply pump pressure	900	5,4-5,9	kp/cm ²		
1.3 Full-load delivery without charge-air pressure	800	65,0-66,0	cm ³ /1000 strokes		2,5
Full-load delivery with charge-air pressure			cm ³ /1000 strokes		
1.4 Idle speed regulation	400	12,0-18,0	cm ³ /1000 strokes		3,0
15 Start 196 bar	100	mind.90,0	cm ³ /1000 strokes		4
1.6 Full-load speed regulation	1200	36,0-44,0	cm ³ /1000 strokes		

2. Test Sp	ecification	75 Checking value 400-530(370-	s in brackets	500	900	1050-1160
2.1 Timing device	rev/min	l .				
	mm	Start	1,0-2,0	0(0,7-2,3)	(3,4-5,0)	5,2-5,9(4,9-6,2)
		200			900	1150
2.2 Supply pump	rev/min kp/cm²	1,9-2,4(1,7-2	2.6)	(!	5.2-6.1)	6,2-6,7(6,0-6,9)
	kp/cm ⁻	500	-,-,	•	.,,.,	1150
Overflow delivery	rev/min					
	cm ³ /10 s	55-100(40-110	J)			55-100(40-110)
2.3 Fuel deliveries	L					
		1			l ou	ur pressure kp/cm²
Speed control lever	Delivery lever	rev/min	cm ³ /1000 strokes		Charge-a	iir pressure kp/cm
End stop	Full	1250-1300	0			
	1	(1230-1320) 1200		(35,0-45	0) -	
		1130-1160	Start	(33,0-45)	,0)	
		1100	61,0-64,0	(60,0-65	.0)	
		800		(64,5-66	,5)	ė.
		500	64,0-67,0	(63,0-68	,0)	
÷						
	Stop	1150	0			
idle stop	Full	450 500				
010 P		450-500 (430-520)	0			
		400		(11,0-19	.0)	
			•	(, 5 - (5)	"	
	Start	100	mind.90,0			
End stop		220-320				

Angle to the stop-plate	Pre-setting dimensions		
Pump α = 25 ± 4° AB FD 926 15 ± 4° β = 36 ± 8° v = 30 - 8° δ = 60 ± 8°	Pump Dimension IV = 4,60 mm Dimension V = 24,65 mm		

WPP 001/4 IHC 3,5 b 2

3. Edition

engine

VA 4/100 H 1090 CR 8-2 Setting of the pointer at a stroke of 1 mm in relation to outlet "A".

12.77 supersedes IHC company D 206

Nozzle-and-holder assembly 1 688 901 020 (172 + 3 bar)

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Tester: Test Intructions and Test Equipment VDT-WPP 161/4 B

Pre-stroke setting

0,5 mm ± 0.04

1. Settings	rev/min	Settings		Charge-air press kp/cm ²	Difference in delivery cm ³
1.1 Timing device travel	800	3,7-4,7	mm		
1.2 Supply pump pressure	800	5,2-5,7	kp/cm²		
1.3 Full-load delivery without charge-air pressure	800	60,5-61,5	cm ³ /1000 strokes		2,5
Full-load delivery with charge-air pressure			cm ³ /1000 strokes		
1.4 Idle speed regulation	400	9,0-15,0	cm ³ /1000 strokes		3,0
15 Start 196 bar	100	mind.90,0	cm 1/1000 strokes		
1.6 Full-load speed regulation	1150	26,0-34,0	cm 1/1000 strokes		<u></u>

2. Test Spe	ecification	Checking value			000 4070
2.1 Timing device	rev/min	100-230(70-20	50 800	900	930-1070
	mm	Start	(3,4-5,0)	4,2-5,2(3,9-5,	5) 4,7-5,4(4,4-5,7)
2.2 Supply pump	rev/min	200	800		1090
Z.Z Oupply pump	kp/cm²	2,2-2,7(2,0-	2,9) (5,0-5	,9)	6,4-6,9(6,2-7,1)
		500			1090
Overflow delivery	rev/min cm³/10 s	55-100(40-	110)		55-100(40-110)
23 Fuel deliveries					
Speed control lever	Delivery lever	rev/min	cm³/1000 strokes		Charge-air pressure kp/cm ²
End stop	Fuil	1170-1200 (1150-1240) 1150 1100-1120 1050 800 500	0 Start 61,5-64,5 52,5-55,5	(60,0-62,0)	
	Stop	1.090	0		
Idle stop	Fuli	450-500 (430-520) 400	0	(8,0-16,0)	
	Start	100	mind.90,0		
End stop		220-320			

Angle to the stop-plate	Pre-setting dimensions
$ \begin{array}{lll} Pump & = 25 \pm 4^{\circ} \\ \beta & = 40 \pm 8^{\circ} \\ \gamma & = 30 - 8^{\circ} \\ \delta & = 60 \pm 8^{\circ} \end{array} $	Pump Dimension IV = 1,0 mm Dimension V = 24,6 mm

WPP 001/4 IHC 2,4 c 1 2. Edition

VA 3/100 H 1250 CR 9-1 (P) Setting of the pointer at a stroke of 1 mm in relation to outlet "A".

Nozzle-and-holder assembly 1 688 901 020 (172 + 3 bar)

11.73 supersedes IHC company

engine

All test specifications are valid for Basch Fuel Injection Pump Test Benches and Testers Test Intructions and Test Equipment

D 155-Crawler 500 C

VDT-WPP 161/4 B Pre-setting see reverse side

Pre-stroke setting

1.6 Full-load speed regulation

0,3 mm ± 0,04

1300

Charge-air press Difference in delivery kp/cm³ Settings 1. Settings rev/min kp/cm 900 3,1-4,1 1.1 Timing device travel 900 5,0-5,5 kp/cm² 12 Supply pump pressure cm³/1000 strokes 800 63,5-64,5 2,5 1.3 Full-load delivery without charge-air pressure cm³/1000 strokes Full-load delivery with charge-air 300 9,5-13,5 cm³/1000 strokes 3,0 1.4 Idle speed regulation 15 Start 196 bar 100 mind.90,0 cm³/1000 strokes

36,0-44,0

cm³/1000 strokes

2. Test Sp	ecificatio	NS Checking value	s in brackets				
2.1 Timing device	rev/min	320-450(290-	480)	600	9	00	1100-1250
	mm	Start	1,3-2,3(1,0-2,6)	(2,8-	4,4)	5,2-5,9(4,9-6,2)
2 2 Supply pump	rev/min	200			9	00	1250
!	kp/cm ⁻	1,2-1,7(1,0-	1,9)		(4,8-	5,7)	6,5-7,0(6,3-7,2)
Overflow delivery	rev/min	500					1250
	cm³/10 s	55-100(40-	110)				55-100(40-110)
23 Fuel deliveries							
Speed control lever	Delivery lever	rev/min	cm ³ /1000 strokes			Charge	-air pressure kp/cm²
End stop	Full	1360-1410 (1340-1430)	0				
		1300 1250-1270 1220 800	Start 61,0-64,0	(35,0-4 (60,0-6 (63,0-6	55,0) 55,0)		
		500	54,5-57,5	(53,5-	58,5)		
	Stop	1250	0				
idle stop	Full	340-400 (320-420) 300	0	(8,5-16	5,5)		
End stop	Start	100 220-320	mind.90,0	•			

Testoil-ISO 4113

Angle to the stop-plate	Pre-setting dimensions
Pump $a = 25 \pm 4^{\circ}$ $\beta = 55 \pm 8^{\circ}$ $v = 30 - 8^{\circ}$ $\delta = 60 \pm 8^{\circ}$	Pump Dimension IV = 3,0 mm Dimension V = 24,6 mm

A10

En

WPP 001/4 IHC 3,5 e

2. Edition

VA 4/100 H 1150 CR 12-10 Setting of the pointer at a stroke of 1 mm in relation to outlet "A".

8.73 supersedes IHC company D 206

Nozzle-and-holder assembly 1 688 901 020 (172 + 3 bar)

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers Test Intructions and Test Equipment

VDT-WPP 161/4 B

Pre-stroke setting

estoil-ISO 4113

 $0.5 \, \mathrm{mm}$ ± 0.04

Test Specifications

Pre-setting see reverse side Difference in delivery cm³ Settings Charge-air press 1. Settings rev/min kp/cm 800

2,5-3,5 1.1 Timing device travel 4,5-5,0 800 kp/cm² 1.2 Supply pump pressure 61,5-62,5 800 2.5 -cm³/1000 strokes 1.3 Full-load delivery without charge-air pressure cm³/1000 strokes Full-load delivery with charge-air 370 12.0-18.0 3.0 cm³/1000 strokes 1.4 Idle speed regulation 100 mind.90.0 196 bar cm³/1000 strokes 1.5 Start 1230 21,0-29,0 cm³/1000 strokes 1.6 Full-toad speed regulation

Checking values in brackets

420-500

(400-520)

370

100

220-300

rev/min	350-520(320-	550)	600	800	1020-1150
mm	Start	0,9-1,9(0	,6-2,2)	(2,2-3,8	3) 4,7-5,4(4,4-5,7)
rev/min	200			800	1150
kp/cm²	1,5-2,0(1,3-	2,2)		(4,3-5,2	2) 5,8-6,3(5,6-6,5)
	500				1150
cm ³ /10 s	55-100(40-	110)			55-100(40-110)
Full	1250-1310	0	<u> </u>		
				l o	harge air pressure kp/cm²
	(1230-1330)		(20.0-	30.0)	
	1150-1170	Start			
	1200 800	66,0-69,0			
	rev/min kp/cm² rev/min cm³/10 s	mm Start rev/min kp/cm² 1,5-2,0(1,3- 500 55-100(40- Delivery lever rev/min Full 1250-1310 (1230-1330) 1230 1150-1170 1200	mm Start 0,9-1,9(0,200 200 1,5-2,0(1,3-2,2) 500 55-100(40-110) Delivery lever rev/min cm³/1000 strokes Full 1250-1310 (1230-1330) 1230 1150-1170 Start 1200 66,0-69,0	mm Start 0,9-1,9(0,6-2,2) 200 200 1,5-2,0(1,3-2,2) 500 55-100(40-110) $ \begin{array}{ c c c c c c c c c c c c c c c c c c c$	mm Start 0,9-1,9(0,6-2,2) (2,2-3,8 200 800 800 800 800 800 800 800 800 80

BOSCH

End stop

Start

idle stop

0

mind.90,0

(11,0-19,0)

Angle to the stop-plate	Pre-setting dimensions	
Pump $\alpha = 25 \pm 4^{\circ}$ $\beta = 40 \pm 8^{\circ}$ $\gamma = 30 - 3^{\circ}$ $\delta = 60 + 8^{\circ}$	Pump Dimension IV = 2,0 mm Dimension V = 24,6 mm	

WPP 001/4 THC 5,8 p 1 3. Edition

VA 6/100 H 1150 CR 191-1 CR 191-1 P

2. Test Specifications

0 460 306 238

supersedes

IHC

comp. engine

D-358/280

Nozzle-and-holder assembly 1 688 901 020 (172 + 3 bar)

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

Test Intructions and Test Equipment

VDT-WPP 161/4 B

Pre-setting see reverse side

Pre-stroke setting 0.4 mm \pm 0.02(\pm 0.04) Setting of the pointer at a stroke of 1 mm in relation to outlet "A"

1. Settings	rev/min	Settings		Charge-air press kp/cm ²	Difference in delivery cm ³
1.1 Timing device travel	900	4,0-4,8	mm		
1.2 Supply pump pressure	900	5,4-5,9	kp/cm²		
1.3 Full-load delivery without	800	71,5-72,5	cm³/1000 strokes		2,5
charge-air pressure Fulf-load delivery with charge-air			cm ³ /1000 strokes		
pressure 1.4 Idle speed regulation	450	8,0-14,0	cm ³ /1000 strokes		3,0
1 5 Start	100	mind.70,0	cm ³ /1000 strokes		
1.6 Full-load speed regulation	1200	29,0-35,0	cm 11000 strokes		

Checking values in brackets

2.1 Timing device 2.2 Supply pump	rev/min	Start 200	0,8-1,8(0	.5-2.1)(3.7-5	,1) 4,7-5,4(4,4-5,7
2.2 Supply nump	rev/min	200			,,, 4,, 5,4(4,4 5,7
Z & OGODIA DOLLA	1647111111	1 200		900	1150
	kp/cm ²	1,9-2,4(1,7-2	2,6)	(5,2-6	,1) 6,2-6,7(6,0-6,9
	,	500			1150
Overflow delivery	rev/min cm ³ /10 s	55-100(40-1	10)		55-100(40-110)
23 Fuel deliveries Speed control lever	Delivery lever	rev/min	cm³/1000 strokes		Charge-air pressure kp/cm'
End stop	Full	1230-1280 (1210-1300) 1200 1100 800 500	0 68,5-71,5 72,0-75,0 0	(28,0-36,0) (67,5-72,5) (71,0-73,0) (71,0-76,0)	
Idle stop	Full	480-530 (460-550) 450	0	(7,0-15,0)	
End stop	Start	100 250-360	mind.70,0		

estoil-ISO 4113

BOSCH

Angle to the stop plate	Pre-setting dimensions
Pump $\alpha = 25 \pm 4^{\circ}$ $\beta = 45 \pm 8^{\circ}$ $\gamma = 30 - 8^{\circ}$ $\delta = 60 + 8^{\circ}$	Pump Dimension IV = 2,40 mm Dimension V = 24,65 mm

A14

WPP 001/4 FIA 2,3a 5

1. Edition

En

VA 4/110 H 1200 CL 136-2 0 460 314 021

Setting of the pointer at a stroke of 1 mm in

relation to outlet "A".

Nozzle-and-holder assembly 1 688 901 020 (172 + 3 bar) supersedes

engine

company Fiat

All test specifications are valid for Bosch Fuel Injection Pump Test Benches

8045-02

Test Intructions and Test Equipment

VDT-WPP 161/4 B

Pre-setting see reverse side

Pre-stroke setting

 $0.5 \text{ mm} \pm 0.02 (\pm 0.04)$

1. Settings	rev/min	Settings	Charge air press	Difference in delivery cm ³
1 1 Timing device travel	800	3,7-4,5 mm		
1.2 Supply pump pressure	800	5,3-5,8 kp/cm/		
1.3 Full-load delivery without charge-air pressure	800	57,5-58,5 cm ³ /1000 stroke		2,5
Full-load delivery with charge-air pressure		cm ³ /1000 stroke	\$	
1.4 Idle speed regulation	300	17,0-23,0 cm 11000 stroke	s	3,0
15 Start (autom.)	100	mind.130,0 cm ³ /1000 stroke	s	
1 6 Full-load speed regulation	1250	36,0-44,0 cm ³ /1000 stroke	s	

2. Test Sp	ecificatio	NS Checking value	s in brackets		
	rev/min	200-350(170-	380)	800	1100-1230
	mm	Start		(3,4-4,8)	6,1-6,7(5,8-7,0)
22 Supply pump	rev/min	200		800	1200
	kp/cm²	1,6-2,1(1,4-	2,3)	(5,1-6,0)	6,8-7,3(6,6-7,5)
Overflow delivery	rev/min	500			1200
,	cm³/10 s	55-100(40-	110)		55-100(40-110)
23 Fuel deliveries					
Speed control lever	Delivery lever	rev/min	cm³/1000 strokes	,	Charge-air pressure kp/cm/
End stop	Full	1320-1400 (1300-1420) 1250 1180 800 500		(35,0-45,0) (53,5-58,5) (57,0-59,0) (52,5-57,5)	
	Stop	1200	0		
Idle stop	Full	390-410 (370-430) 300	0	(16,0-24,0)	
End stop	Start	100 110-230	mind.130,0	•	

Testoil-ISO 4113

ingle to the stop-plate	Pre-setting dimensions
Fump $a = 25 \pm 4^{\circ}$ $3 = 35 \pm 8^{\circ}$ $4 = 30 - 8^{\circ}$ $5 = 60 + 8^{\circ}$	Pump Dimension I♥ 3,0 mm Dimension № 24,6 mm

WPP 001/4 IHC 5,8 r 2. Edition

VA 6/11 H 1250 CR 404 CR 404 P

0 460 315 036 Setting of the pointer at a stroke of 1 mm in relation to outlet "A".

Nozzle-and-holder assembly 1 688 901 020 (172 + 3 bar)

5.79 supersedes

IHC company DT 358 engine

All test specifications are valid for Bosch Fuel Injection Pump Test Benches

and Testers Test Intructions and Test Equipment **VDT-WPP 161/4 B**

Pre-setting see reverse side

 $0.5 \text{ mm } \pm 0.02 \ (\pm 0.04)$ Pre-stroke setting Kolbenhub 1,0 mm bezogen auf Auslaß "A"

1.	Settings	rev/min	Settings		Charge-air press kp/cm ²	Difference in delivery cm ³
1.1	Timing device travel	900	5,7-6,5	mm		
1 2	Supply pump pressure	900	5,5-6,0	kp/cm ²		
13	Full-load delivery without charge-air pressure	800	85,5-86,5	cm ³ /1000 strokes		2,5
	Full-load delivery with charge-air pressure			cm ³ /1000 strokes		
1 4	Idle speed regulation	300	14,0-20,0	cm ³ /1000 strakes	İ	3,0
15	Start	100	mind.90,0	cm ³ /1000 strokes		
16	Full-load speed regulation	1350	24,0-32,0	cm ³ /1000 strokes		

2. Test Spenderice	ecificatio	ns Checking value	s in brackets 400	900	1250
Z i filming device	mm	Start 1,3	3-2,3(1,0-2,6	(5,4-6,8)	7,0-7,7(6,7-8,0)
2 2 Supply pump	rev/min	200	2.41	900 (5,3-6,2)	1250 6,8-7,3(6,6-7,5)
Overflow delivery	kp/cm ² rev/min cm ³ /10 s	500 55-100(40-		(3,3-0,2)	1250 55-100(40-110)
23 Fuel deliveries					
Speed control lever	Delivery lever	rev/min	cm ³ /1000 strokes		Charge-air pressure kp/cm²
End stop	Full	1380-1430 (1360-1450) 1350 1220 800 500	0 84,5-87,5 83,0-87,0	(00,0 0,,0)	
	Stop	1250	0		
Idle stop	Fulf	450-500 (430-520) 300	0	(13,0-21,0)	
End stop	Start	100	mind.90,0	•	·

BOSCH

Geschaftsbereich KH. Kundendienst. Kf2-Ausrustung. £ 1980 by Robert Bosch GmbH, Postfach 50, D-7000 Stuttgart 1. Printed in the Federal Republic of Germany Imprimé en République Fédérale d'Allemagne par Robert Bosch GmbH.

Angle to the stop-plate	Pre-setting dimensions		
Pump = $25 \pm 4^{\circ}$ $_{\beta} = 50 \pm 8^{\circ}$ $_{\gamma} = 30 - 8^{\circ}$ $_{\delta} = 60 + 8^{\circ}$	Pump Dimension IV = 1,20 mm Dimension V = 24,65 mm		

WPP 001/4 IHC 5,8 q 1

1. Edition

En

VA 6/10 H 1250 CR 402 CR 402 P

2. Test Specifications

Setting of the pointer at a stroke of 1 mm in relation to outlet "A". Nozzle-and-hold

Nozzle-and-holder assembly 1 688 901 020 (172 + 3 bar) company IHC D-358/943

5.79

Pre-stroke setting

 $0,4 \text{ mm} \pm 0,02 (\pm 0,04)$

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

Test Intructions and Test Equipment

VDT-WPP 161/4 B

supersedes

Pre-setting see reverse side

				Fie Setting See Teverse Side				
1. Settings	rev/min	Settings		Cnarge-air press kp/cm ²	Difference in delivery cm ³			
1 1 Timing device travel	1000	4,2-5,0	mm					
1 2 Supply pump pressure	1000	4,9-5,4	kp/cm²					
1.3 Full-load delivery without	1000	72,0-73,0	cm ³ /1000 strokes		2,5			
charge air pressure Full-load delivery with charge air			cm ³ /1000 strokes		Ì			
pressure 1.4 Idle speed regulation	450	17,0-23,0	cm ³ /1000 strokes	<u> </u>	3,0			
1.5 Start	100	mind.80,0	cm ³ /1000 strokes					
1 6 Full-load speed regulation	1300	31,0-39,0	cm 1/1000 strokes					

Checking values in brackets

2.1 Timing device	rev/min		500	10	000	1250
	mm	Start 1,	0-2,0(1,7-2,	3) (3,9-	-5,3)	5,2-5,9(4,9-6,2)
22 Supply pump	rev/min kp/cm ²	200	-1,9))00 -5,6)	1250 5,6-6,1(5,4-6,3)
Overflow delivery	rev/min cm³/10 s	500 55-100(40-1	10)			1250 55-100(40-110)
23 Fuel deliveries	<u> </u>			-		
Speed control lever	Delivery lever	rev/min	cm ³ /1000 strokes		Charge	-air pressure kp/cm²
End stop	Full	1330-1380 (1310-1400) 1300 1220 1000 500		(30,0-40,0) (70,5-75,5) (71,5-73,5) (60,0-65,0)		
	Stop	1250	0			
Idle stop	Full	580-650 (560-670) 450	0	(16,0-24,0)		
End stop	Start	100 260-360	mind.80,0			

Testoil-ISO 41

Angle to the stop-plate	Pre-setting dimensions
Pump $\alpha = 25 \pm 4^{\circ}$ $\beta = 50 \pm 8^{\circ}$ $\gamma = 30 - 8^{\circ}$ $\delta = 60 - 8^{\circ}$	Pump Dimension I√ 1,20 mm Dimension √ 24,65 mm

A 20

WPP 001/4 IHC 5,8 t 1

2. Edition

Εn

VA 6/10 H 1200 CR 401-2

2. Test Specifications

CR 401-2 P

Nozzle-and-holder assembly 1 688 901 020 (172 + 3 bar) supersedes 12.80

company engine

IHC D 358/886 US

0 460 306 254

Setting of the pointer at a stroke of 1 mm in relation to outlet "A".

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers **Test Intructions and Test Equipment**

VDT-WPP 161/4 B

Pre-setting see reverse side

Pre-stroke setting

1.	Settings	rev/min	Settings		Charge-air press kp/cm ²	Difference in delivery cm ³
1.1	Timing device travel	600	2,3-2,7	mm .		
12	Supply pump pressure	600	4,1-4,6	kp/cm²		
	Full-load delivery without	900	74,0-75,0	cm³/1000 strokes		2,5
1	charge-air pressure Full-load delivery with charge-air			cm ³ /1000 strokes		
1	pressure Idle speed regulation	350	12,0-10,0	cm ³ /1000 strokes		3,0
15	Start	100	mind.80,0	cm ³ /1000 strokes		
16	Full-load speed regulation	1250	36,0-44,0	cm ³ /1000 strokes		

Checking values in brackets

2.1 Timing device	rev/min		500	600	1200
	mm	Start 0,9-	1,7(0,6-2,0)	(2,0-3,0)	2,9-3,6(2,6-3,9)
2.2 Supply pump	rev/min	200		600	1200
en asker/kennk	kp/cm²	1,8-2,3(1,6-	-2,5)	(3,9-4,8)	6,0-6,5(5,8-6,7)
Overflow delivery	rey/min	500			1200
Overnow delivery	cm ³ /10 s	55-100(40-	-110)		55-100(40-110)
23 Fuel deliveries					
Speed control lever	Delivery lever	rev/min	cm ³ /1000 strokes		Charge-air pressure kp/cm²
End stop	Full	1300-1350 (1280-1370) 1250 (180 900 500	0 72,0-75,0 72,0-75,0	(35,0-45,0) (71,0-76,0) (73,5-75,5) (71,0-76,0)	D
	Stop	1200	0		
idle stop	Full	480-530 (480-550) 350	0	(11,0-19,0)	
	Start	100	mind.80,0		
Endanschlag	,	260-360			

Angle to the stop-plate	Pre-setting dimensions
Pump α = 25 ± 4° β = 45 ± 8° γ = 30 - 8° δ = 60 + 8°	Pump Dimension IV = 0,90 mm Dimension V = 24,65 mm

WPP 001/4 IHC 5,8 q

2. Edition

VA 6/10 H 1200 CR 403 CR 403 P

Nozzle-and-holder assembly 1 688 901 020 (172 + 3 bar)

2.79 supersedes IHC company

0 460 306 244 Setting of the pointer at a stroke of 1 mm in

engine

D 358/725

relation to outlet "A".

All test specifications are valid for Bosch Fuel Injection Pump Test Paches and Testers Test Intructions and Test Equipment

VDT-WPP 161/4 B

Pre-Stroke	Sernia	0	min

1. Se	ttings	rev/min	Settings		Charge-air press kp/cm ²	Difference in delivery cm ³
1.1 Timing	device travel	1000	4,7-5,5	mm		
1.2 Supply	y pump pressure	1000	4,9-5,4	kp/cm²		
	ad delivery without	800	68,5-69,5	cm ³ /1000 strokes		2,5
•	e-air pressure ad delivery with charge-air			cm ³ /1000 strokes		
pressu 1 4 Idle sp	ure peed regulation	500	13,0-19,0	cm ³ /1000 strokes		3,0
1 5 Start		100	mind.90,0	cm ³ /1000 strokes		
16 Full-to	ad speed regulation	1300	15,0-23,0	cm ³ /1000 strokes		

2. Test Spe	ecificatio	NS Checking value			
2.1 Timing device	rev/min		600	1000	1200
	mm	Start 1,2	-2,2(0,9-2,5)	(4,4-5,8)	5,2-5,9(4,9-6,2)
2.2 Supply pump	rev/min	200		1000	1200
	kp/cm²	1,8-2,3(1,6-	2,5)	(4,5-5,7)	5,5-6,0(5,3-6,2)
		500			1200
Overflow delivery	rev/min cm ³ /10 s	55-100(40-	110)		55-100(40-110)
23 Fuel deliveries					
Speed control lever	Delivery lever	rev/min	cm ³ /1000 strokes		Charge-air pressure kp/cm²
End stop	Full	1310-1360 (1290-1380) 1300 1150 800 500	0 70,5-73,5 66,5-69,5	(14,0-24,0) (69,5-74,5) (68,0-70,0) (65,5-70,5)	
	Stop	1200	0		
Idle slop	Full	590-640 (570-660) 500	0	(12,0-20,0)	
Fm.J. a.A.a.	Start	100	mind.90,0		·
End stop		260-360			

Angle to the stop-plate	Pre-setting dimensions
Pump $\alpha = 25 \pm 4^{\circ}$ $\beta = 46 \pm 8^{\circ}$ $\gamma = 30 - 8^{\circ}$ $\delta = 60 + 8^{\circ}$	Pump Dimension IV = 2,80 mm Dimension V = 24,65 mm

WPP 001/4 IHC 5,8 n 1

2. Edition

Nozzle-and-holder assembly 1 688 901 020 (172 + 3 bar)

Setting of the pointer at a stroke of 1 mm in

company engine

supersedes

All test specifications are valid for

3.81

IHC

Bosch Fuel Injection Pump Test Benches and Testers Test Intructions and Test Equipment

D-358-786

VDT-WPP 161/4 B

Pre-stroke setting

0 460 306 252

0 mm

VA 6/10 H 1200 CR 401/1

relation to outlet "A".

Testoil-ISO 4113

			PI	e-setting see revers	se sine
1. Settings	rev/min	Settings		Charge-air press kp/cm ²	Difference in delivery cm ²
1 1 Timing device travel 1 2 Supply pump pressure	600	2,3-2,7	mm kp/cm ²		
1 3 Full-load delivery without charge-air pressure	600 900	4,2-4,7 68,0-69,0	cm ³ /1000 strokes		2,5
Full-load delivery with charge-air pressure			cm ³ /1000 strokes		
1 4 Idle speed regulation	350	15,0-21,0	cm ³ /1000 strokes		3,0
1 5 Start 1 6 Full-load speed regulation	100 1250	mind.80,0 36,0-44,0	cm ⁹ /1900 strokes		

2. Test Sp	ecificatio	NS Checking value	es in brackets		
2.1 Timing device	rev/min		500	600	1200
	mm	Start 0,9	-1,7(0,6-2,0)	(2,0-3,0)	2,9-3,6(2,6-3,9)
22 Supply pump	rev/min	200		600	1200
	kp/cm²	1,9-2,4(1,7-	2,2)	(4,0-4,9)	6,3-6,8(6,1-7,0)
Overflow delivery	rev/min	500			1200
	cm ³ /10 s	55-100(40-11	0)		55-100(40-110)
23 Fuel deliveries					
Speed control lever	Delivery lever	rev/min	cm ³ /1000 strokes		Charge air pressure kp/cm²
End stop	Full	1290-1340 (1270-1360) 1250 1180 900 500	0 62,0-65,0 65,5-68,5	(67,5-69,5)	
	Stop	1200	0		
Idle stop	Full	520-580 (500-600) 350	0	(14,0-22,0)	
End stop	Start	100 260-360	mind.80,0		

Angle to the stop-plate	Pre-setting dimensions
	Pump Dimension IV= 1,00 mm Dimension V = 24,65 mm

WPP 001/4 IHC 5,1 a

3. Edition

En

VA 6/100 H 1000 CR 199 CR 199 P Nozzle-and-holder assembly 1 688 901 020 (172+3 bar)

supersedes 6.79
company IHC
D 310

0 460 306 233 Setting of the pointer at a stroke of 1 mm in relation to outlet "A". Pre-stroke setting 0 mm \pm 0,02(\pm 0,04)

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers Test Intructions and Test Equipment VDT-WPP 161/4 8

Pre-setting see reverse side

Festoil-ISO 4113

				Pre-setting see reverse side		
1. Settings	rev/min	Settings		Charge-air press kp/cm ²	Difference in delivery cm ³	
1.1 Timing device travel	750	2,8-3,6	mm .			
1.2 Supply pump pressure	750	4,6-5,1	kp/cm ²			
1.3 Full-load delivery without charge-air pressure	800	67,0-68,0	cm ³ /1000 strokes		2,5	
Full-load delivery with charge-air pressure			cm ³ /1000 strokes			
1.4 idle speed regulation	350	19,0-25,0	cm ³ /1000 strokes		3,0	
1 5 Start	100	mind.75,0	cm ³ /1000 strokes			
1 6 Full-load speed regulation	1070	31,0-39,0	cm ³ /1000 strokes	1		

2. Test Sp	rev/min	1	550	750		1000
a	mm	6			٥١	
		i	9-1,/(0,6-2	(2,5-3,	9)	5,1-5,8(4,8-6,1)
2 2 Supply pump	rev/min	200		750		1000
	kp/cm²	1,4-1,9(1,2-2	2,1)	(2,6-3,	8)	5,8-6,2(5,6-6,4)
Overflow delivery	rev/min	500				1000
•	cm ³ /10 s	55-100(40-110))			55-100(40-110)
23 Fuel deliveries	4					
Speed control lever	Delivery lever	rev/min	cm ³ /1000 strokes		Charg	e-air pressure kp/cm²
End stop	Full	1090-1140 (1070-1160) 1070 950 800 500	0 64,2-66,8 65,0-68,0	(30,0-40,0) (63,2-67,8) (66,5-68,5) (64,0-69,0)	9	
,	Stop	1000	0			
Idle stop	Full	350	0	(18,0-26,0		
End stop	Start	100 260-360	mind.75,0			

Angle to the stop-plate	Pre-setting dimensions
Pump $\alpha = 25 \pm 4^{\circ}$ $\beta = 32 \pm 8^{\circ}$ $Y = 30 - 8^{\circ}$ $\delta = 60 + 8^{\circ}$	Pump Dimension IV = 3,70 mm Dimension V = 24,65 mm

WPP 001/4 IHC 5,1 q

2. Edition

engine

VA 6/100 H 1200 CR 198 CR 198 P Nozzle-and-holder assembly 1 688 901 020 (172 + 3 bar) supersedes company

10.78

D 310

IHC

0 460 306 231

Setting of the pointer at a stroke of 1 mm in relation to outlet "A".

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

Test Intructions and Test Equipment

VDT-WPP 161/4 B Pre-setting see reverse side

Pre-stroke setting

estoil-ISO

Charge-air press kp/cm² Difference in delivery Settings 1. Settings

1.1 Timing device travel 650 2,7-3,5 kp/cm² 650 4,1-4,6 1.2 Supply pump pressure 1.3 Full-load delivery without 800 68,0-69,0 cm3/1000 strokes 2.5 charge-air pressure cm3/1000 strokes Full-load delivery with charge-air

pressure cm3/1000 strokes 380 12,0-18,0 3,0 1.4 Idle speed regulation cm³/1000 strokes

100 mind.75.0 15 Start 1250 36.0-44.0 cm3/1000 strokes 1.6 Full-load speed regulation

260-360

2. Test Specifications Checking values in brackets 2.1 Timing device rev/min 450 650 800 0,8-1,6(0,5-1,9) 2,7-3,5(2,4-3,8)3,4-4,1(3,1-4,4)Start 650 1200 22 Supply pump rev/min

1,4-1,9(1,2-2,1) (3.9-4.8)kp/cm² 6,2-6,7(6,0-6,9)500 1200

rev/min Overflow delivery 55-100(40-110) 55-100(40-110) cm³/10 s

23 Fuel deliveries

cm³/1000 strokes Charge-air pressure kp/cm2 Speed control lever Delivery lever rev/min Full End stop 1300-1350 0 (1280 - 1370)1250 (35,0-45,0)(63,0-68,0)1150 64,0-67,0 800 (67,5-69,5)500 69,0-72,0 (68,0-73,0)1200 Stop 400-450 0 idle stop Full (380-470)380 (11,0-19,0)100 mind.75.0 Start

End stop

Angle to the stop-plate	Pre-setting dimensions
$\frac{Pump}{\alpha} = 25 \pm 4^{\circ}$ $\beta = 48 \pm 8^{\circ}$ $\gamma = 30 - 8^{\circ}$ $\delta = 60 + 8^{\circ}$	Pump Dimension IV = 2,20 mm Dimension V = 24,65 mm

WPP 001/4 IHC 5,1 q 1

4. Edition

VA 6/100 H 1200 CR 196

CR 196 P

Nozzle-and-holder assembly 1 688 901 020 (172 + 3 bar)

12.79 IHC company D 310 engine

0 460 306 228

Setting of the pointer at a stroke of 1 mm in relation to outlet "A".

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers Test Intructions and Test Equipment VDT-WPP 161/4 B

supersedes

Pre-stroke setting

 $0,3 \text{ mm} \pm 0,02 (\pm 0,04)$

					Pre-setting see reverse side			
1. Settings	rev/min	Settings		Charge-air press kp/cm ²	Difference in delivery cm ³			
1 1 Timing device travel	800	4,7-5,7	mm					
1.2 Supply pump pressure	800	4,2-4,7	kp/cm²					
1.3 Full-load delivery without charge-air pressure	800	62,5-63,5	cm ³ /1000 strokes		2,5			
Full-load delivery with charge-air			cm ³ /1000 strokes					
pressure 1 4 Idle speed regulation	450	13,0-19,0	cm ³ /1000 strokes	'	3,0			
1 5 Start	100	mind.75,0	cm ³ /1000 strokes					
1 6 Full-load speed regulation	1270	21,0-29,0	cm ³ /1000 strokes	;				

2. Test Sp	eciticatioi rev/min	NS Checking value 120-270(90-3		00	800	1000-1150
•	mm	Start	•			6,1-6,8(5,8-7,1)
2 2 Supply pump	rev/min	200			800	1200
	kp/cm²	2,0-2,5(1,8-	2,7)		(4,0-4,9)	5,3-5,8(5,1-6,0)
Overflow delivery	rev/min	500	•			1200
	cm ³ /10 s	55-100(40-11	0)			55-100(40-110)
23 Fuel deliveries						
Speed control lever	Delivery lever	rev/min	cm ³ /1000 strokes		Charg	e-air pressure kp/cm²
End stop	Full	1280-1320 (1260-1340) 1270 1220-1250 1150 800 500	0 Start 63,5-66,5 57,5-60,5	(62,0-6)	57,5) 54,0)	
idle stop	Full	530-590 (510-610) 450	0	(12,0-2	20,0)	
End stop	Start	100 260-360	mind.75,0			

Angle to the stop-plate	Pre-setting dimensions	
Pump $\alpha = 25 \pm 4^{\circ}$ $\beta = 50 \pm 8^{\circ}$ $\gamma = 30 - 8^{\circ}$ $\delta = 60 + 8^{\circ}$	Pump Dimension IV = 0,60 mm Dimension V = 24,65 mm	

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WPP 001/4 STE 2,3 d

3. Edition ·

En

VA 3/100 H 1200 CR 193 0 460 303 151

Nozzle-and-holder assembly 1 688 901 020 (172 + 3 bar) supersedes 5.77

company Steyr

engine WD 308.45

Pre-stroke setting

 $0.3 \text{ mm} \pm 0.02(\pm 0.04)$

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers Test Intructions and Test Equipment VDT-WPP 161/4 B

1. Settings	rev/min	Settings		Charge-air press kp/cm ²	Difference in delivery cm ²
1.1 Timing device travel	1000	3,2-4,2	mm		
1.2 Supply pump pressure	1000	5,2-5,7	kp/cm²		
1.3 Full-toad delivery without	1200	62,0-63,0	cm ³ /1000 strokes		2,5
charge-air pressure Full-load delivery with charge-air			cm ³ /1000 strokes		
pressure 1.4 Idle speed regulation	300	9,5-15,5	cm³/1000 strokes		3,0
15 Start	100	mind.70,0	cm ³ /1000 strokes		
1.6 Full-load speed regulation	1280	34,0-42,0	cm ³ /1000 strokes		

2. Test Sp	ecificatio	NS Checking value				
2.1 Timing device	rev/min	450-600(420-	630) 7	00 1000	}	1050-1200
	mm	Start	1,0-2,0(0,7-2,3)(2,9-4	,5)4,	3-5,0(4,0-5,3)
2.2 Supply pump	rev/min	200		1000)	1200
сл сорругомр	kp/cm²	1,6-2,1(1,4-	2,3)	(5,0-5,9	3) 5,9	-6,4(5,7-6,6)
Overflow delivery	rev/min	500				1200
Over110# delivery	cm ³ /10 s	55-100(40-11	0)		55-	100(40-110)
23 Fuel deliveries						
Speed control lever	Delivery lever	rev/min	cm ³ /1000 strokes		Charge-a	air pressure kp/cm²
End stop	Full	1340-1390 (1320-1410) 1280 1220-1250 1200 900 500	0 Start 67,0-69,0 58,5-61,5	(35,0-43,0) (61,0-63,5) (66,0-70,0) (57,5-62,5)		
Idle stop	Full Start	360-410 (340-430) 300 100 120-220	0 mind.70,0	(8,5-16,5)		·

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Angle to the stop-plate	Pre-setting dimensions		
Pump $\alpha = 25 \pm 4^{\circ}$ $\beta = 50 \pm 8^{\circ}$ $v = 30 - 8^{\circ}$ $\delta = 60 + 8^{\circ}$	Pump Dimension IV = 4,20 mm Dimension V = 24,65 mm		

WPP 001/4 IHC 2,9 c 1

3. Edition

VA 3/100 H 1200 CR 61 Setting of the pointer at a stroke of 1 mm in relation to outlet "A".

supersedes company

IHC

D 179 WW 40 H 9

Nozzle-and-holder assembly

engine

1 688 901 020 (172 + 3 bar)

Checking values in brackets

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers Test Intructions and Test Equipment **VDT-WPP 161/4 B**

7.73

Pre-setting see reverse side

Pre-stroke setting 0,3 mm $\pm 0,04$

2. Test Specifications

1. Settings	rev/min	Settings		Charge-air press kp/cm ²	Difference in delivery cm ³
1.1 Timing device travel	800	3,7-4,7	mm .		
1.2 Supply pump pressure	800	4,8-5,3	kp/cm ²		
1.3 Full-load delivery without charge-air pressure	800	70,0-71,0	cm ³ /1000 strokes		2,5
Full-load delivery with charge-air pressure			cm ³ /1000 strokes		
1.4 Idle speed regulation	375	12,0-18,0	cm³/1000 strokes		3,0
1 5 Start	100	mind.90,0	cm ³ /1000 strokes		
1.6 Full-load speed regulation	1300	26,0-34,0	cm ³ /1000 strokes		

2.1 Timing device	rev/min mm	Start 250-400(220- 1,3-2,3(1,0-	430) 500 2,6) (3,4-5,	800 1 0)4,7-5,7(4,4	1000 1050-1200 3-6,0) 6,0-6,7(5,7-7,0)
2.2 Supply pump	rev/min	200		800	1200
ł	kp/cm²	1,8-2,3(1,6-	2,5)	(4,6-5,5)	6,3-6,8(6,1-7,0)
Overflow delivery	rev/min	500			1200
	cm ³ /10 s	55-100(40-11	0) .		55-100(40-110)
2.3 Fuel deliveries					
Speed control lever	Delivery lever	rev/min	cm ³ /1000 strokes		Charge-air pressure kp/cm²
End stop	Full	1340-1400 (1320-1420) 1300 1220-1240 1180 800 500	0 Start 72,0-75,0 64,5-67,5	(25,0-35,0) (71,0-76,0) (69,5-71,5) (63,5-68,5)	
	Stop	1200	0		
idle stop	Full	440-520 (420-540) 375	0	(11,0-19,0)	
	Start	100	mind.90,0		

B11

BOSCH

End stop

220-300

Angle to the stop-plate	Pre-setting dimensions		
Pump $\alpha = 25 \pm 4^{\circ}$ $\beta = 50 \pm 8^{\circ}$ $\gamma = 30 - 8^{\circ}$ $\delta = 60 \pm 8^{\circ}$	Pump Dimension JV = 1,6 mm Dimension V = 24,6 mm		

Testoil-ISO 4113

B12

En

46

WPP 001/4 IHC 3,9 e 2. Edition

in

VA 4/100 H 1150 CR 69-3 0 460 304 224

Nozzle-and-holder assembly compa 1 688 901 020 (172 + 3 bar) engine

supersedes 10.74 IHC D 239

Setting of the pointer at a stroke of 1 mm in relation to outlet "A".

Pre-stroke setting

 $0.5 \, \text{mm} \pm 0.04$

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers Test Intructions and Test Equipment

VDT-WPP 161/4 B
Pre-setting see reverse side

1. Settings	rev/min	Settings		Charge-air press kp/cm ²	Difference in delivery cm ²
1 1 Timing device travel	800	3,7-4,7	mm		
1 2 Supply pump pressure	800	6,0-6,5	kp/cm ²		
1 3 Full-load delivery without charge-air pressure	800	64,5-65,5	cm ³ /1000 strokes		2,5
Full-load delivery with charge-air pressure			cm ³ /1000 strokes		
1 4 Idle speed regulation	400	7,0-13,0	cm ³ /1000 strokes		3,0
1 5 Start	100	mind.90,0	cm ³ /1000 strokes		
1.6 Full-load speed regulation	1200	31,0-39,0	cm ³ /1000 strokes		

2. Test Sp	ecificatio	NS Checking value	s in brackets			
2.1 Timing device	rev/min	170-300(140-3	330)	400	800	930-1080
	mm	Start	0,9-1,9	(0,6-2,2)	(3,4-5,0)	4,7-5,4(4,4-5,7)
2 2 Supply pump	rev/min	200			80ů	1150
	kp/cm²	3,2-3,7(3,0-3)	3,9)	. (;	5,8-6,7)	7,3-7,8(7,1-8,0)
O refferentations		500				1150
Overflow delivery	rev/min cm ³ /10 s	55-100(40-110))			55-100(40-110)
23 Fuel deliveries						
Speed control lever	Delivery lever	rev/min	cm ³ /1000 strokes		Charge	air pressure kp/cm²
End stop	Full	1230-1280 (1210-1300) 1200 1150-1170	0 Start	(30,0-40	0,0)	
		1100 800 500	68,5-71,5 60,5-63,5	(64,0-66)	5,0)	
	Stop	1150	0			
igle stop	Full	450-50C (430-520) 400	0	(6,0-14	0)	
	Start	100	mind.90,0	(0,0-14)	,0,	
End stop		220-320				

Testoil-ISO 411:

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BOSCH

Angle to the stop-plate	Pre-setting dimensions
Pump $\alpha = 25 \pm 4^{\circ}$ $\beta = 40 \pm 8^{\circ}$ $\gamma = 30 - 8^{\circ}$ $\delta = 60 \pm 8^{\circ}$	Pump Dimension IV = 3,0 mm Dimension V = 24,6 mm

WPP 001/4 IHC 2.9 d 5

1. Edition

VA 4/100 H 1150 CR 69-1 0 460 304 178

Nozzle-and-holder assembly 1 688 901 020 (172 + 3 bar) company. IHC D 239-S 824 engine

Setting of the pointer at a stroke of 1 mm in relation to outlet "A".

2. Test Specifications

All test specifications are valid for **Bosch Fuel Injection Pump Test Benches** and Testers Test Intructions and Test Equipment

VDT-WPP 161/4 B

supersedes

Pre-setting see reverse side

Pre-stroke setting

 $0.5 \, \text{mm} \pm 0.04$

1. Settings	rev/min	Settings		Charge air press kp/cm ²	Difference in delivery cm ²
1.1 Timing device travel	700	2,1-2,9	mm		
1.2 Supply pump pressure	700	4,2-4,7	kp/cm²		
1.3 Full-load delivery without charge air pressure	800	73,0-74,0	cm ³ /1000 strokes		2,5
Full-load delivery with charge-air			cm ³ /1000 strokes		
pressure 1 4 Idle speed regulation	350	12,0-18,0	cm ³ /1000 strokes		3,0
1.5 Start 196 bar	100	mind.90,0	cm ³ /1000 strokes	ļ	
1 6 Full-load speed regulation	1200	41,0-49,0	cm ³ /1000 strokes		

Checking values in brackets

2 1 Timing device	rev/min	300-450(270-		500		700	950-1100
	mm	Start	1,0-2,0(0,7-2,3)	(1,8-3	,2)	4,7-5,4(4,4-5,7)
22 Supply pump	rev/min	200				700	1150
	kp/cm²	1,5-2,0(1,3-	2,2)		(4,0-4	,9)	6,0-6,5(5,8-6,7)
O a transfer and		500					1150
Overflow delivery	rev/min cm ³ /10 s	55-100(40-11	0)				55-100(40-110)
23 Fuel deliveries	L						
Speed control lever	Delivery lever	rev/min	cm ³ /1000 strokes		ļ	Charge	air pressure kp/cm ²
End stop	Full	1230-1280 (1210-1300) 1200 1150-1180 1120 800 500	0 Start 73,5-76,5 65,5-68,5	(72,5-74)	7,5) 1,5)		
	Stop	1150	0				
Idle stop	Full	410-460 (390-480) 350	0	(11,0-19	9,0)		
	Start	100	 mind.90,0				
End stop		220-300					·

B15

Angle to the stop-plate	Pre-setting dimensions
Pump $\alpha = 25 \pm 4^{\circ}$ $\beta = 40 \pm 8^{\circ}$ $\gamma = 30 - 4^{\circ}$ $\delta = 60 \pm 8^{\circ}$	Pump Dimension IV = 2,8 mm Dimension V = 24,6 mm

WPP 001/4 IHC 5,1 f

2. Edition

VA 6/100 H 1350 BR 49 0 460 306 077 upersedes

10.69

company

engine

IHC D 310/36

Nozzle-and-holder assembly 1 688 901 020 (172 + 3 bar)

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

Test Intructions and Test Equipment VDT-WPP 161/4 B

VDT-WPP 161/4 B
Pre-setting see reverse side

Pre-stroke setting $0.5\,\mathrm{mm}$ Plunger lift of $1.0\,\mathrm{mm}$ related to outlet "A"

1. Settings	rev/m:n	Settings		Charge-air press kp/cm ²	Difference in delivery
1.1 Timing device travel	700	6,8-7,8	mm		
1.2 Supply pump pressure	700	5,1-5,6	kp/cm²		
1.3 Full-toad delivery without charge-air pressure	1000	68,5-69,5	cm ³ /1000 strokes		2,5
Full-toad delivery with charge-air			cm ¹ /1000 strokes		
pressure 1 4 Idle speed regulation	350	17 - 23	cm ³ /1000 strokes		3,0
1 5 Start	100	mind. 80	cm³/1000 strokes		
1.6 Full-load speed regulation	1430	46,0-54,0	cm 1/1000 strokes		

2. Test Sp 21 Timing device	rev/min	300-450(270-480) Start	700 (6,5-8,1)	1080-1230 13,7-14,4(13,4-14,7)
		100	700	1350
22 Supply pump	rev/min kp/cm²	1,5-2,0(1,3-2,2) 500	(4,9-5,8) 1000	7,4-7,9 (7,2-8,1)
Overflow delivery	rev/min cm³/10 s	mind.25	55-100(40-110)	

	cm³/10 s				
23 Fuel deliveries					
Speed control lever	Delivery lever	rev/min	cm ³ /1000 strokes		Charge air pressure kp/cm/
End stop	Full	1500-1550 (1480-1570) 1430 1330 1000 500	0 63-66 56-59	(45 - 55) (62 - 67) (68 - 70) (55 - 60)	
	Stop	1350	0 .		
Idle stop	Full	450-540 (460-560) 350	0	(16 - 24)	
End stop	Start	100 mind.200	mind. 80,0		

Testoil-ISO 4113

BOSCH

Angle to the stop-plate	Pre-setting dimensions
Pump $\alpha = 25 \pm 4^{\circ}$ $\beta = 45 \pm 8^{\circ}$ $Y = 30 \pm 8^{\circ}$ $\delta = 60 \pm 8^{\circ}$	Pump Dimension IV = 3,0 mm BMP 161/32 Dimension V = - mm

B18

WPP 001/4 DEE 2,5 d

3. Edition

VA 3/100 H 1250 BR 26 Z 0 460 303 050

1.68 supersedes John Deere company 44 B engine

Nozzle-and-holder assembly 1 688 901 020 (172 + 3 bar)

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers Test Intructions and Test Equipment VDT-WPP 161/4 B

Pre-setting see reverse side

Pre-stroke setting

 $0.3_{mm} \pm 0.02(\pm 0.04)$

1. Settings	rev/min	Settings		Charge-air press kp/cm ²	Difference in delivery cm ³
1.1 Timing device travel	800	7,8-8,8	mm		
1.2 Supply pump pressure	800	5,0-5,5	kp/cm ²		
1.3 Full-load delivery without charge-air pressure	1100	70,0-71,0	cm ³ /1000 strokes		2,5
Full-load delivery with charge-air pressure			cm ³ /3000 strokes		
1 4 Idle speed regulation	400	9,0-15,0	cm 1/1000 strokes		3,0
1 5 Start			cm ³ /1000 strokes		
I ව Full-toad speed regulation	1300	38,0-46,0	cm 1/1000 strakes		

2. Test Sp	rev/min	NS Checking value:	360)	800	1030-1180
2 3 Filming device	mm	Start	•	7,5-9,1)	11,7-12,4(11,4-12,7)
2 2 Supply pump Overflow delivery	rev/min kp/cm ⁻ rev/min cm ¹ /10 s	200 1,3-1,8(1,1- 500 mind.25		800 1,8-5,7) 1000 -125(40-140	
23 Fuel deliveries					
Speed control lever	Delivery lever	rev/min	cm³/1000 strokes		Charge-air pressure kp/cm²
End stop	Full	1360-1460 (1340-1480) 1400 1300 1200 1100 500 100	0 max. 3,0 66,0-69,0 58,0-62,0 mind.45,5	(69,5-71,5))
Idle stop	Full	520-580	0	 	
		(500-600) 400		(8,0-16,0)	
	Start				

Angle to the stop-plate	Pre-setting dimensions
Pump $\alpha : = 25 \pm 4^{\circ}$ $\beta = 44 \pm 8^{\circ}$ $V = 30 - 8^{\circ}$ $\delta = 60 \pm 8^{\circ}$	Pump Dimension IV = 2,5 mm Dimension V = - mm Dimension I = 7,0 mm Dimension II = 12,0 mm Dimension III = 28,3 mm

B20

46

WPP 001/4 IHC 5,8 c

3. Edition

VA 6/110 H 1250 BR 47 0 460 316 006 supersedes 3.72 company IHC

engine

D 358 TC

Nozzle-and-holder assembly 1 688 901 020 (172 + 3 bar)

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers Test Intructions and Test Equipment

VDT-WPP 161/4 B

Pre-setting see reverse side

Pre-stroke setting 0,5 mm Plunger lift of 1,0 mm related to outlet "A"

1.	Settings	rev/min	Settings		Charge-air press kp/cm ²	Difference in delivery cm ³
11	Timing device travel	800	8,3-9,1	mm	0 bar	
12	Supply pump pressure	800	4,9-5,4	kp/cm ²	0 bar	
13	Full-load delivery without	800	77,0-80,0	cm ³ /1000 strokes	0 bar	2,5
	charge-air pressure Full-load delivery with charge-air	800	88,5-89,5	cm ³ /1000 strokes	0,43 bar	
14	pressure Idle speed regulation	300	17,0-23,0	cm ³ /1000 strokes	0 bar	3,0
15	Start	100	mind.100	cm ³ /1000 strokes	0 bar	
16	Full-load speed regulation	1350	21,0-29,0	cm ³ /1000 strokes	0,46 bar	

2. Test Sp	2. Test Specifications Checking values in brackets									
2.1 Timing device	rev/min	300-450(270-480)	800	1100-1250						
	mm	Start	(8,0-9,4)	13,7-14,4(13,4-14,7)						
2.2 Supply pump	rev/min	100	800	1250						
2.2 30000, 10.000	kp/cm²	1,0-1,5(0,8-1,7)	(4,7-5,6)	6,3-6,8(6,1-7,0)						
Overflow delivery	rev/min	500		1250						
Overnow delivery	cm ³ /10 s	55-125(40-140)		55-125(40-140)						

Speed control lever	Delivery lever	rev/min	cm ³ /1000 strokes		Charge-air pressure kp/cm/
End stop	Full	1390-1440 (1370-1460) 1350 1250-1280 1200 800 500	Start 89,0-92,0	(20,0-30,0) (88,0-93.0) (88,0-90,0) (73,0-78,0)	0,46 bar 0,46 bar 0,46 bar 0,46 bar 0,46 bar 0,43 bar 0,10 bar
	Stop	1250	0		
(dle stop	Full	400-450 (380-470) 300	0	(16,0-24,0)	

Testoil-1

End stop

Start

mind.100

100

mind. 180

Angle to the sto: plate	Pre-setting dimensions
Pump $\alpha = 25 \pm 4^{\circ}$ $\beta = 45 \pm 8^{\circ}$ $Y = 30 - 8^{\circ}$ $\delta = 60 \pm 8^{\circ}$	Pump Dimension IV = 1,5 mm bis FD 130 Dimension V = - mm Dimension IV = 1,0 mm ab FD 131

LDA Start of timing advance 65 - 85 mm Hg End of timing advance 280 - 320 mm Hg

322

WPP 001/4 IHC 5,1 d

3. Edition

VA 6/100 H 1200 BR 14 0 460 306 040

12.70 supersedes IHC company D 310 engine

Nozzle-and-holder assembly 1 688 901 020 (172 + 3 bar)

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers Test Intructions and Test Equipment **VDT-WPP 161/4 B**

Pre-setting see reverse side

Pre-stroke setting $0.3 \, \text{mm}$ Plunger lift of 1.0 mm related to outlet "A"

1. Settings	rev/min	Settings		Charge-air press kp/cm ²	Difference in delivery cm ³
i 1 Timing device travel	1000	6,1-7,1	mm		
12 Supply pump pressure	1000	6,3-6,8	kp/cm²		
1.3 Full-load delivery without charge-air pressure	800	60,0-61,0	cm ³ /1000 strokes		2,5
Full-load delivery with charge-air pressure			cm ³ /1000 strokes		
1 4 Idle speed regulation	300	9,5-15,5	cm 1/1000 strokes	İ	3,0
1 5 Start	100	mind.95,0	cm³/1000 strakes		
1.6 Full-load speed regulation	1300	21,0-29,0	cm /1000 strokes		

2. Test Sp	ecificatio	NS Checking value	s in brackets		
2.1 Timing device	rev/min	400-550 (370-	-580)	1000	1010-1120
	mm	Start		(5,8-7,4)	6,7-7,4(6,4-7,7)
2.2 Supply pump	rev/min	100		1000	1200
	kp/cm²	2,2-2,7(2,0-2	2,9)	(5,9-7,3)	7,0-7,5(6,8-7,7)
Overflow delivery	ten/wiu	500		1000	1200
,	cm ³ /10 s		į	55-125(40-140)	55-125(40-140)
23 Fuel deliveries	<u> </u>				
Speed control lever	Delivery lever	rev/min	cm ³ /1000 stroke	s	Charge-air pressure kp/cm*
End stop	Full	1330-1380 (1310-1400) 1300 1180 800 500	0 63,0-66,0 54,5-57,5	(20,0-30,0) (62,0-67,0) (59,5-61,5) (53,5-58,5)	
	Stop	1200	0		
Idle stop	Fuil	340-400 (320-420) 300	0	(8,5-16,5)	
End stop	Start	100 500 mind.95	mind.95, max. 47,		·

estoil-ISO 4113

Angle to the stcp-plate	Pre-setting dimensions
Pump $\alpha = 25 \pm 4^{\circ}$ $\beta = 40 \pm 8^{\circ}$ $\gamma = 30 - 8^{\circ}$ $\delta = 60 \pm 8^{\circ}$	Pump Dimension IV= 2,5 mm Dimension V = - mm .

46

WPP 001/4 IND 2,7 a 1

2. Edition

En

VA 6/100 H 2000 BR 126 0 460 306 097 Start-of-delivery setting for plunger lift 0.72 mm referenced to outlet "B" at 13.5° before TDC cyl. no.6

Nozzle-and-holder assembly 1-688 901 020 (172 + 3 bar)

supersedes 1.68
company Volvo-Penta/Peugeot
engine Peugeot XDP 618

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers Test intructions and Test Equipment VDT-WPP 161/4 B

Pre-setting see reverse side

Pre-stroke setting

0,6 mm

1. Settings	rev/min	Settings		Charge-air press kp/cm ²	Difference in delivery cm ³
1.1 Timing device travel	1300	8,0-9,0	mm		
1 2 Supply pump pressure	1300	5,1-5,6	kp/cm²	,	
1.3 Full-load delivery without charge-air pressure	1200	36,0-37,0	cm ³ /1000 strokes		2,5
Full-load delivery with charge-air pressure 1 4 Idle speed regulation	300	7,0-13,0	cm ³ /1000 strokes	}	3,0
1 5 Start	100	mind.40,0	cm ³ /1000 strokes		
1 6 Full-load speed regulation	2150	14,0-20,0	cm ³ /1000 strokes		

2. Test Sp	ecificatio	NS Checking value:				
2 1 Timing device	rev/min	550-710(520-	740)	1300	1	730-1920
	mm	Start		(7,7-9,3)	13,7-1	4,4(13,4-14,7)
2 2 Supply pump	rev/min	100		1300		2000
z z Goppiy pamp	kp/cm ²	0,2-0,7(0 -0	, 9)	(4,9-5,8)	6,9-7	,4(6,7-7,6)
		500				2000
Overflow delivery	rev/min cm ³ /10 s	mind.25			55-10	0(40-110)
23 Fuel deliveries						
Speed control lever	Delivery lever	rev/min	cm ³ /1000 stroke	es	Char	ge-air pressure kp/cm²
End stop	Full .	2200-2300 (2180-2320) 2150 2000 1200 500	0 33,0-36,0 21,0-25,0	(13,0-21, (32,0-37, (35,5-37, (20,0-26,	,0) ,0) ,5) ,0)	
	Stop	2000	0			
idle stop	Full	380-450 (360-470) 300	0	(6,0-14,0	0)	
•	Start	100	mind.40,0)		
End stop		300-550		•		

Testoil-ISO 4113

BOSCH

Angle to the stop-plate	Pre-setting dimensions		
Pump $\alpha = 25 \pm 4^{\circ}$ $\beta = 42 \pm 8^{\circ}$ $\gamma = 30 - 8^{\circ}$ $\delta = 60 + 8^{\circ}$	Pump Dimension IV = - mm Dimension V = - mm Diménsion I = 7,0 mm Dimension II = 14,0 mm Dimension III = 35,2 mm		

WPP 001/4 MWM 2,5 a

2. Edition

VA 3/100 H 1150 BR 65 0 460 303 098

6.70 supersedes MWM company D 925-3 engine

Nozzle-and-holder assembly 1 688 901 020 (172 + 3 bar)

All test specifications are valid for **Bosch Fuel Injection Pump Test Benches** and Testers Test Intructions and Test Equipment **VDT-WPP 161/4 B**

Pre-setting see reverse side

Pre-stroke setting 0,4 mm
Plunger lift of 1,0 mm related to outlet "A"

1. Settings	rev/min	Settings		Charge-air press kp/cm²	Difference in delivery cm ³
1.1 Timing device travel	800	6,2-7,2	mm		
1.2 Supply pump pressure	. 800	5,1-5,6	kp/cm²		
1.3 Full-load delivery without	900	60,0-61,0	cm ³ /1000 strokes		2,5
charge-air pressure Full-load delivery with charge-air			cm ³ /1000 strokes		
pressure 1.4 Idle speed regulation	250	10,0-16,0	cm³/1000 strokes		3,0
1 5 Start	100	mind.80,0	cm ³ /1000 strokes		
1 6 Full-load speed regulation	1200	22,0-28,0	cm ³ /1000 strokes		

2. Test Spe	rev/min	NS Checking value 300-450(270-	480)	800	930-1050
_	mm	Start		(5,9-7,5)	8,7-9,4 (8,4-9,7)
	rev/min	100	2 4)	800	1150 6,1-6,6(5,9-6,8)
Overflow delivery	rev/min	500 mind. 25		1000 5-125(40-140	6
	cm ³ /10 s				
23 Fuel deliveries	le a const	to the	13440001		Character 12-2
Speed control lever	Delivery lever	rev/min	cm ³ /1000 strokes		Charge-air pressure kp/cm²
End stop	Full	1230-1330 (1210-1350) 1200 1130 900 500		(21,0-29,0) (57,5-62,5) (59,5-61,5) (52,0-57,0)	
	Stop	1150	0		
Idle stop	Full	360-420 (340-440)	0		
		250		(9,0-17,0)	
	Start	100 500	mind.80,0 30,0-54,0	(29,0-55,0)	

Angi	le to the stop-plate		Pre-setting dimensions
Pum α β γ δ	= 25 ± 4° = 50 ± 8° = 30 - 8° = 60 ± 8°		Pump Dimension IV = 0,4 mm Dimension V = - mm
		đ	

WPP 001/4 IHC 5,8 d 1

800

2. Edition

VA 6/100 H 1200 CR 21-4

referenced to outlet "A".

Setting in accordance with WPP 161/4,1st. Supplement plunger lift 1.0 mm

2. Test Specifications

21 Timing device | rev/min

Checking values in brackets

250-350(220-380)

Nozzle-and-holder assembly 1 688 901 020 (172 + 3 bar)

11.73 supersedes

IHC company D 358-866 Mexiko

engine

All test specifications are valid for **Bosch Fuel Injection Pump Test Benches** Test Intructions and Test Equipment

1000-1150

VDT-WPP 161/4 B

Pre-setting see reverse side

Pre-stroke setting

1. Settings	rev/min	Settings		Charge-air press kp/cm²	Difference in delivery cm ³
1.1 Timing device travel	800	4,0-5,0	mm		
1.2 Supply pump pressure	800	4,7-5,2	kp/c m²		·
1.3 Full-load delivery without	800	68,5-69,5	cm ³ /1000 strokes		2,5
charge-air pressure Full-load delivery with charge-air			cm ³ /1000 strokes		
pressure 1.4 Idle speed regulation	300	12,0-18,0	cm ³ /1000 strokes		3,0
15 Start 196 bar	100	mind.90,0	cm ³ /1000 strokes		
1.6 Full-load speed regulation	1300	15,0-23,0	cm ³ /1000 strokes		

400

	mm	Start	1,3-2,3(1,0	1-2,6) (3,7-5,	,3) 5,2-5,9(4,9-6,2)
22 Supply pump	rev/min kp/cm ²	200	2,7)	800 (4,5-5	1200 ,4) 5,8-6,3(5,6-6,5)
Overflow delivery	rev/min cm ³ /10 s	500 55-100(40-1	10)		1200 55-100(40-110)
23 Fuel deliveries		_			·
Speed control lever	Delivery lever	rev/min	cm ³ /1000 strokes		Charge-air pressure kp/cm²
End stop	Full	1330-1370 (1310-1390) 1300 1230-1250 1150 800 500		(14,0-24,0) (69,5-74,5) (68,0-70,0) (64,5-69,5)	
	Stop	1200	0		
Idle stop	Full	400-460 (380-480) 300	0	(11,0-19,0)	
End stop	Start	100 220-300	mind.90,0		

BOSCH

Angle to the stop-plate	4,	Pre-setting dimensions
α = 25 ± 4° $ β = 50 ± 8° $ $ γ = 30 - 8° $ $ δ = 60 ± 8°$		Pump Dimension IV= 4,00 mm Dimension V= 24,65 mm

Testoil-ISO 4113

WPP 001/4 IHC 5,1 c 3

3. Edition

VA 6/100 H 1050 CR 21-3 Setting of the pointer at a stroke of 1 mm in supersedes IHC company D 310

relation to outlet "A".

company D 310 8/71 engine

Nozzle-and-holder assembly 1 688 901 020 (172 + 3 bar)

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers Test Intructions and Test Equipment

VDT-WPP 161/4 B

Pre-setting see reverse side

Pre-stroke setting

0,3_{mm}

1. Settings	rev/min	Settings		Charge-air press kp/cm ²	Difference in delivery cm ³
1.1 Timing device travel	800	2,0-3,0	mm		
1 2 Supply pump pressure	800	4,5-5,0	kp/cm²		
Full-load delivery without charge-air pressure	800	60,0-61,0	cm³/1000 strokes		2,5
Full-load delivery with charge-air			cm ³ /1000 strokes		1
pressure 1 4 Idle speed regulation	500	17,0-23,0	cm ³ /1000 strokes	<u> </u> 	3,0
15 Start 196 bar	100	mind.85,0	cm ³ /1000 strokes		
1 6 Full-load speed regulation	1120	11,0-19,0	cm³/1000 strokes		

2. Test Sp		NS Checking value 500-620(470-6		800	920-1050
2.1 Timing device	rev/min		•		
	mm	Start	0,5-1,5(0,3)	2-1,8)(1,7-3,	3)3,4-4,1(3,1-4,4)
2.2 Supply pump	rev/min	200		800	1050
	kp/cm²	1,3-1,8(1,1-2	2,0)	(4,3-5,2)	5,5-6,0(5,3-6,2)
Overflow delivery	rey/min	500	4		1050
Overnow deniery	cm ³ /10 s	55-100(40-110))		55-100(40-110)
23 Fuel deliveries				c.	
Speed control lever	Delivery lever	rev/min	cm³/1000 strokes		Charge-air pressure kp/cm²
End stop	Full	1150-1200 (1130-1220) 1120 1020 800 500	0 60,0-63,0 56,5-59,5	(10,0-20,0) (59,0-64,0) (59,5-61,5) (55,5-60,5)	
	Stop	10,50	0		
Idle stop	Full	600-660 (580-680) 500	0	(16,0-24,0)	
End stop	Start	100 220-300	mind.85,0		

-2-

Angle to the stop-plate	Pre-setting dimensions
Pump $a = 25 \pm 4^{\circ}$ $\beta = 40 \pm 8^{\circ}$ $\gamma = 30 - 8^{\circ}$ $\delta = 60 \pm 8^{\circ}$	Pump Dimension IV= 2,0 mm Dimension V = 24,6 mm

En

46

WPP 001/4 IHC 3,5 g

3. Edition

VA 4/100 H 1250 CR 12-13 CR 12-16 supersedes 8.77
company
engine D 239

Nozzle-and-holder assembly 1 688 901 020 (172 + 3 bar)

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers Test Intructions and Test Equipment

VDT-WPP 161/4 B
Pre-setting see reverse side

Pre-stroke setting 0,5 mm \pm 0,04 Plunger lift of 1,0 mm related to outlet "A"

2. Test Specifications Checking values in brackets

1. Settings	rev/min	Settings		Charge-air press kp/cm ²	Difference in delivery cm ³
1.1 Timing device travel	800	5,0-6,0	mm		
1 2 Supply pump pressure	800	5,6-6.1	kp/cm²		2.5
1.3 Full-load delivery without	800	67,5-68,5	cm ³ /1000 strokes		2,5
charge-air pressure Full-load delivery with charge-air			cm ³ /1000 strokes		
pressure 1.4 Idle speed regulation	350	14,5-20,5	cm ³ /1000 strokes		3,0
15 Start 196 bar	100	mind.90,0	cm ³ /1000 strakes		
1 6 Full-load speed regulation	1320	31,0-39,0	cm ³ /1000 strokes		

2.1 Timing device	rev/min	190-330(160-3	360) 400	800	990-1130
21	mm	Start		-2,5) (4,7-6,	3) 7,0-7,7(6,7-8,0)
22 00ppi) F3F	rev/min kp/cm²	200 2,5-3,0(2,3-3	3,2)	800 (5,4-6,3)	1250 7,1-7,6(6,9-7,8)
	rev/min cm ³ /10 s	500 55-100(40 -1 10	0)		1250 55-100(40-110)
23 Fuel deliveries Speed control lever	Delivery lever	rev/min	cm³/1000 strokes		Charge-air pressure kp/cm ²
End stop	Full	1350-1400 (1330-1420) 1320 1260-1290 1200 800 500	0 Start 73,0-76,0 63,0-66,0	(30,0-40,0) (72,0-77,0) (67,0-69,0) (62,0-67,0)	
	Stop	1250	0		
idle stop	Full	450-500 (430-520) 350	0	(13,5-21,5)	
End stop	Start	100 220-300	mind. 90,0		

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BOSCH

Angle to the stop-plate	Pre-setting dimensions
Pump = $25 \pm 4^{\circ}$ α = $40 \pm 8^{\circ}$ γ = $30 - 8^{\circ}$ δ = $60 \pm 8^{\circ}$	Pump Dimension IV = 3,60 mm Dimension V = 24,65 mm

WPP 001/4 IHC 3,5 e 2

1. Edition

VA 4/100 H 1200 CR 12-12

supersedes

company

IHC

engine

D 239

Nozzle-and-holder assembly 1 688 901 020 (172 + 3 bar)

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

Test Intructions and Test Equipment

VDT-WPP 161/4 B

0,5 Pre-stroke setting

Plunger lift of 1,0 mm related to outlet "A"

2. Test Specifications Checking values in brackets

Pre-setting see reverse side

estoil-ISO 4113

1. Settings	rev/min	Settings		Charge-air press kp/cm	Difference in delivery cm ³
1 1 Timing device travel 1 2 Supply pump pressure 1 3 Full-load delivery without charge-air pressure Full-load delivery with charge-air pressure 1 4 Idle speed regulation 1 5 Start 196 bar 1 6 Full-load speed regulation	800 800 800 350 100	3,2-4,2 4,9-5,4 70,0-71,0 12,0-18,0 mind.90,0 24,0-32,0	mm kp/cm ² cm ³ /1000 strokes cm ³ /1000 strokes cm ³ /1000 strokes cm ³ /1000 strokes		2,5 3,0

2.1 Timing device	rev/min	220-370(190-	400) 5	00	800	1000-1150
	mm	Start	1,3-2,3(1	,0-2,6)	(2,9-4	,5) 4,7-5,4(4,4-5,7)
22 Supply pump	rev/min	200	2 6)	(800 4 7-5	1200 6) 6,3-6,8(6,1-7,0)
Overflow delivery	rev/min cm³/10 s	500 55-100(40-11				1200 55-100(40-110)
23 Fuel deliveries						
Speed control lever	Delivery lever	rev/min	cm³/1000 strokes			Charge-air pressure kp/cm/
End stop	Full	1350-1400 (1330-1420) 1300 1200-1240 1180 800 500	0 Start 73,0-76,0 66,0-69,0	(69,5-7)	77,0) 71,5)	
	Stop	1200	0			
idle stop	Full	470-550 (450-570) 350	0	(11,0-1	19,0)	
End stop	Start	100 220 - 300	mind.90,0		•	

Angle to the stop-plate	Pre-setting dimensions	
	Pump Dimension I¥ 1,8 mm Dimension V= 24,6 mm	

46

WPP 001/4 IHC 3,9 m 2. Edition

VA 4/100 H 1100 CR 12-6

supersedes

6.78

company

IHC

engine

D 239-544

Nozzle-and-holder assembly 1 688 901 020 (172 + 3 bar)

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

Test Intructions and Test Equipment

VDT-WPP 161/4 B

Pre-setting see reverse side

Pre-stroke setting 0,5 mm $\pm 0,02$ ($\pm 0,04$) Plunger lift of 1,0 mm related to outlet "A"

2. Test Specifications Checking values in brackets

1.	Settings	rev/min	Settings	Charge-air press kp/cm ²	Difference in delivery cm ³
11	Timing device travel	600	3,7-4,7 mm		
1.2	Supply pump pressure	600	4,3-4,8 kp/cm²		
13	Full-load delivery without charge-air pressure	1050	65,5-66,5 cm ³ /1000 strok	ļ	2,5
	Full-load delivery with charge-air pressure		cm ³ /1000 strok	es	
14	Idle speed regulation	350	12,0-18,0 cm ³ /1000 strok	es	3,0
15	start 196 bar	100	mind.85,0 cm ³ /1000 strok	es	
16	Full-load speed regulation	1150	42,0-50,0 cm ² /1000 strok	es	

Z. 1001 OF		Checking value			
2.1 Timing device	rev/min	120-270(90-30	00) 300	600	850-1030
	ന്നപ	Start	1,0-1,3(0,	,7-1,6) (3,4-5	6,0) 6,1-6,8(5,8-7,1)
2.2 Supply pump	rey/min	200		600	1100
	kp/cm²	1,9-2,4(1,7-	2,6)	(4,1-5,0)	6,3-6,8(6,1-7,0)
Overflow delivery	rev/min	500			1100
Overnow delivery	cm ³ /10 s	55-100(40-11	0)		55-100(40-110)
23 Fuel deliveries					
Speed control lever	Delivery lever	rev/min	cm ³ /1000 strokes		Charge-air pressure kp/cm/
End stop	Full	1200-1270	0		
	.	(1180-1290)			
	1	1150		(41,0~51,0)	
		1120-1140	Start	/CE 0 C7 0\	
		1050	64 0 66 0	(65,0-67,0) (63,0-67,0)	1
		900	64,0-66,0		į
		500	00,5-05,5	(02,0-00,0)	,

	Stop	1100	0		
	3.05		1		

Testoil-ISO 411

C13

BOSCH

End stop

idle stop

Full

Start

390-450

(370-470)

350

100

220-300

0

mind.85,0

(11,0-19,0)

Angle to the stop-plate	Pre-setting dimensions
Pump $\alpha = 25 \pm 4^{\circ}$ $\beta = 40 \pm 8^{\circ}$ $Y = 30 - 8^{\circ}$ $\delta = 60 \pm 8^{\circ}$	Pump Dimension IV = 2,00 mm Dimension V = 24,65 mm

WPP 001/4 IHC 5,8 i

2. Edition

VA 6/100 H 1250 CR 94 0 460 306 210

3.77 supersedes IHC company

engine

D 358

Nozzle-and-holder assembly 1 688 901 020 (172 + 3 bar)

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

Test Intructions and Test Equipment

VDT-WPP 161/4 B

Pre-setting see reverse side

mm Pre-stroke setting Plunger lift of 1,0 mm related to outlet "A"

1. Settings	rev/min	Settings		Charge; air press kp/cm	Difference in delivery cm ³
1.1 Timing device travel	700	2,4-3,4	mm		
1.2 Supply pump pressure	700	3,7-4,2	kp/cm²	ļ	
1.3 Full-load delivery without charge-air pressure	800	67,5-68,5	cm ³ /1000 strokes		2,5
Full-load delivery with charge-air			cm ³ /1000 strokes		
pressure 1.4 Idle speed regulation	400	15,0-21,0	cm ¹ /1000 strokes	1	3,0
1 5 Start	100	mind.80,0	cm³/1000 strokes		
1 6 Full-load speed regulation	1300	26,0-34,0	cm 1/1000 strokes		

2. Test Sp		ONS Checking value		700	750-900
2.1 Timing device	rev/min	300-430(2/0-4	100) 500	700	750-900
	ww	Start	0,8-1,8(0,5-2,1)	(2,1-3,7)	3,4-4,1(3,1-4,4)
2 Supply pump	rev/min	200		700	1250
s adhhil hamb	kp/cm²	1,2-1,7(1,0-	1,9)	(3,5-4,4)	5,5-6,0(5,3-6,2)
			500		1250
Overflow delivery	rev/min cm³/10 s		55-100(40-110)		55-100(40-110)

	cm ² /10 s			
23 Fuel deliveries				
Speed control lever	Delivery lever	rev/min	cm ³ /1000 strokes	Charge-air pressure kp/cm ²
End stop	Full	1370-1420 (1350-1440) 1300 1230-1250 1200 800 500	0 (25,0-35,0) Start 61,0-64,0(60,0-65,0) (67,0-69,0) 69,0-72,0(68,0-73,0)	
	Stop	1250	0	
Idle stop	Full	560-620 (540-640) 400	0 (14,0-22,0)	
	Start	100	mind.80,9	

End stop

220-320

estoil-ISO 4113

Angle to the stop-plate	Pre-setting dimensions
Pump $\alpha = 25 \pm 4^{\circ}$ $\beta = 45 \pm 8^{\circ}$ $Y = 30 - 8^{\circ}$ $\delta = 60 \pm 8^{\circ}$	Pump Dimension IV = 0,6 mm Dimension V = 24,6 mm

WPP 001/4 IHC 4,4 a

4. Edition

VA 4/110 H 1150 CR 92 0 460 314 027

Setting in accordance with WPP 161/4,1st. Supplement plunger lift 1.0 mm referenced to outlet "A".

Nozzle-and-holder assembly 1 688 901 020 (172 + 3 bar)

supersedes company engine

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers Test Intructions and Test Equipment VDT-WPP 161/4 B

Pre-setting see reverse side

Pre-stroke setting

	Fie setting see rever	e setting see reverse side		
1. Settings	rev/min	Settings	Charge-air press	Difference in delivery cm ³
1.1 Timing device trave?	900	5,1-6,1 mm		
1 2 Supply pump pressure	900	5,3-5,8 kp/cm²		
1.3 Full-load delivery without charge-air pressure	800	78,5-79,5 cm ³ /1000 st		2,5
Full-load delivery with charge-air pressure		cm ³ /1000 st	rokes	
1.4 Idle speed regulation	350	12,0-18,0 cm ³ /1000 st	rokes	3,0
15 Start 196 bar	100	mind.130,0 cm ³ /1000 st	rokes	
1.6 Full-toad speed regulation	1200	36,0-44,0 cm ³ /1000 st	rokes	

2. Test Spe	rev/min	NS Checking value: 300-430(270-4	s in brackets 460) 6	00	1	900	930-10	80
2.1 Timing device	mm	Start		.6-3.2)	(4.8-	6.4)	6,1-6,8(5,8-	7.1)
		200	1,5 2,5(.	,, ,,,,		900	1150	
22 Supply pump	rev/min	1,9-2,4(1,7-	2.6)				6,3-6,8(6,1-	7.0)
	kp/cm ²	500	2,07		(0).	·,-,	1150	
Overflow delivery	rev/min cm ³ /10 s	55-100(40-11	0)				55-100(40-11	
23 Fuel deliveries								
Speed control lever	Delivery lever	rev/min	cm ³ /1000 strokes			Charge	air pressure kp/cm²	
End stop	Full	1250-1300 (1230-1320) 1200 1100 800 500	0 81,0-84,0 75,5-78,5	(/8,0-8	50,07			
	Stop	1150	0					
Idle stop	Full	420-480 (400-500) 350	0	(11,0-1	19,0)			
	Start	100	mind.130,0					
End stop		220-320		•				

Festoil-ISO 4113

Angle to the stop-plate	Pre-setting dimensions
Pump $\alpha = 25 \pm 4^{\circ}$ $\beta = 40 \pm 8^{\circ}$ $\gamma = 30 - 8^{\circ}$ $\delta = 60 \pm 8^{\circ}$	Pump Dimension IV = 4,0 mm Dimension V = 24,6 mm

WPP 001/4 IHC 5,1 m

4. Edition

VA 6/100 H 1250 CR 91 0 460 306 206

supersedes 11.77 company IHC

engine

D 310

Nozzle-and-holder assembly 1 688 901 020 (172 + 3 bar)

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers Test Intructions and Test Equipment

VDT-WPP 161/4 B

Pre-setting see reverse side

Pre-stroke setting

Plunger lift of 1,0 mm related to outlet "A"

1. Settings	rev/min	Settings		Charge-air press kp/cm ²	Difference in delivery cm ³
1 1 Timing device travel	750	2,3-3,1	mm		
1 2 Supply pump pressure	750	3,7-4,2	kp/cm²		
1.3 Fulf-load delivery without	800	64,5-65,5	cm³/1000 strokes		2,5
charge-air pressure Full-foad deliv@ry with charge-air		~-	cm ³ /1000 strokes		
pressure 1.4 Idle speed regulation	300	12,0-18,0	cm 1/1000 strokes	<u> </u>	3,0
1 5 Start	100	mind.80,0	cm ³ /1000 strokes		
1 6 Full-load speed regulation	1330	26,0-34,0	cm ³ /1000 strokes		

2. Test Spe 21 Timing device	rev/min	430-560(400-	590) (500	750	800-950
	mm	Start	0,7-1,7(0	4-2,0)	(2,0-3,4) 3,4-4,1(3,1-4,4)
	rev/min	200	1 2)	ı	750	1250 5,7-6,2(5,5-6,4)
Overflow delivery	kp/cm² rev/min cm²/10 s	500 55-100(40		,	(3,5-4,4)	1250 55-100(40-110)
2 3 Fuel deliveries			· · · · · · · · · · · · · · · · · · ·			
Speed control lever	Delivery lever	rev/min	cm ³ /1000 strokes	•	c	charge-air pressure kp/cm²
End stop	Full	1370-1420 (1350-1440) 1330 1260-1280 1230 800 500	0 Start 60,0-63,0 61,5-64,5	(59,0 (64,0	0-35,0) 0-64,0) 0-66,0) 5-65,5)	
	Stop	1250	0			
idle stop	Full	303-380 (310-400) 300	0	(11,	0-19,0)	
End stop	Start	100 220-320	mind.80,0			

Angle to the stop-plate	Pre-setting dimensions
Pump $a = 25 \pm 4^{\circ}$ $\beta = 50 \pm 8^{\circ}$ $V = 30 - 8^{\circ}$ $\delta = 60 \pm 8^{\circ}$	Pump Dimension IV = 2,0 mm Dimension V = 24,6 mm

WPP 001/4 IHC 5,8 n

2. Edition

VA 4/110 H 1200 CR 85-1 0 460 314 036

6.78 supersedes IHC company D 246

Nozzle-and-holder assembly 1 688 901 020 (172 + 3 bar)

All test specifications are valid for Bosch Fuel Injection Pump Test Benches Test Intructions and Test Equipment

VDT-WPP 161/4 B

engine

Pre-stroke setting $0.4 \text{ mm} \pm 0.02 (\pm 0.04)$ Plunger lift of 1.0 mm related to outlet "A" Pre-stroke setting

Pre-setting see reverse side

Testoil-ISO 4113

1. Settin	gs	rev/min	Settings		Charge-air press kp/cm ²	Difference in delivery cm ³
1 1 Timing device	e travel	800	4,2-5,0	mm		
1.2 Supply pump	pressure	800	4,9-5,4	kp/cm²		
1 3 Full-load deli charge-air pr		800	73,0-74,0	cm ³ /1000 strokes		2,5
Full-load deli pressure	very with charge-air	-		cm ³ /1000 strokes		
1 4 Idle speed re	gulation	300	9,0-15,0	cm ³ /1000 strokes		3,0
1 5 Start		100	mind.110,0	cm ³ /1000 strokes		
1 6 Full-load spe	ed regulation	1220	36,0-44,0	cm ³ /1000 strokes		

2. Test Sp	ecificatio	NS Checking value:	s in brackets				
2.1 Timing device	rev/min	350-480(330-	510)	500	800	830-980	
	mm	Start	0,7-1,7(0	,4-2,1)	(3,9-5,3) 5,2-5,9(4,9-6,2)	
2 2 Supply pump	rev/min	200			800	1200	
	kp/cm²	1,8-2,3(1,6-	2,5)		(4,7-5,6) 6,4-6,9(6,2-7,1)	
Overflow delivery	rev/min		500			1200	
,	cm 1/10 s		55-100(40-110)			55-100(40-110)	
2.3 Fuel deliveries							
Speed control lever	Delivery lever	rev/min	cm³/1000 strokes		Ch	arge-air pressure kp/cm'	
End stop	Full	1260-1310 (1240-1330) 1220 1150-1170 1100 800 500	0 Start 76,0-79,0 64,5-67,5	(75,0 (72,5	-45,0) -80,0) -74,5) -68,5)		
Idle stop	Full	360-410 (340-430) 300	0	(8,0-	16,0)		
	Start	100	mind.110,0			•	
End stop		220-340					

Angle to the stop-plate	Pre-setting dimensions			
Pump $\alpha = 25 \pm 4^{\circ}$ $\beta = 40 \pm 8^{\circ}$ $\gamma = 30 - 8^{\circ}$ $\delta = 60 \pm 8^{\circ}$	Pump Dimension IV = 3,00 mm Dimension V = 24,65 mm			

WPP 001/4 IHC 5,1 c 1

2. Edition

VA 6/100 H 1150 CR 79 0 460 306 191

3.76 supersedes

company IHC

engine

D 310

Nozzle-and-holder assembly 1 688 901 020 (172 + 3 bar)

All test specifications are valid for Bosch Fuel Injection Pump Test Benches

and Testers Test Intructions and Test Equipment VDT-WPP 161/4 B

Pre-setting see reverse side

Pre-stroke setting

 $0.4^{mm} \pm 0.04$

Plunger lift of 1,0 mm related to outlet "A"

Charge-air press Difference in delivery rev/min 1. Settings 3,2-4,2 800 1.1 Timing device travel 800 5,3-5,8 kp/cm² 1.2 Supply pump pressure 59,5-60,5 2,5 800 cm³/1000 strokes 1.3 Full-load delivery without charge air pressure cm³/1000 strokes Full-load delivery with charge-air 300 11,0-17,0 3,0 cm³/1000 strokes 1.4. Idle speed regulation 100 mind.85,0 196 bar cm³/1000 strokes 1220 21,0-29,0 cm³/1000 strokes 1.6 Full-load speed regulation

2. Test Sp	ecificatio	NS Checking value	s in brackets		
-	rev/min	300-430(270-	460) 50	00 800	1030-1150
	mm	Start	0,9-1,9(0,6	5-2,2) (2,9-4	,5)5,2-5,9(4,9-6,2)
22 Supply pump	rev/min	200		800	1150
	kp/cm ⁻	2,2-2,7(2,0-	2,9)	(5,1-6,0)) 6,6-7,1(6,4-7,3)
Overflow delivery	rev/min		500		1150
oremen genery	cm ³ /10 s	55-100(40-110)		55-100(40-110)	
2.3 Fuel deliveries	<u> </u>				
Speed control lever	Delivery lever	rev/min	cm ³ /1000 strokes		Charge-air pressure kp/cm ²
End stop	Full	1240-1300 (1220-1320) 1220 1170-1190 1130 800 500	0 Start 55,5-58,5 50,5-53,5	(59,0-61,0)	
Idle stop	Full	360-420 (340-440) 300	0 .	(10,0-18,0)	
	Start	100	mind.85,0		
End stop		220-320		•	

BOSCH

Geschaftsbereich KH. Kundendienst. Kf2-Ausrustung € 1580 by Robert Bosch GmbH, Postfach 50, D-7000 Strittgart 1. Printed in the Federal Republic of Germany Imprimé en République Fédérale d'Allemagne par Robert Bosch GmbH.

Angle to the stop-plate	Pre-setting dimensions
Pump $\alpha = 25 \pm 4^{\circ}$ $\beta = 45 \pm 8^{\circ}$ $\gamma = 30 - 8^{\circ}$ $\delta = 60 \pm 8^{\circ}$	Pump Dimension tV Dimension V

1211

WPP 001/4 MWM 2,5 b

2. Edition

VA 3/100 H 1150 CR 86 0 460 303 148

12.74 supersedes MWM company D 925-3 L

Nozzle-and-holder assembly 1 688 901 020 (172 + 3 bar)

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers Test Intructions and Test Equipment

VDT-WPP 161/4 B

engine

Pre-setting see reverse side

Testoil-ISO 4113

 $0.2 \text{ mm} \pm 0.02 (\pm 0.04)$

Plunger lift of 1.0 mm related to outlet "A"

1. Settings	rev/min	Settings		Charge-air press kp/cm	Difference in delivery cm ³
1.1 Timing device travel	800	2,2-3,2	mm		
1.2 Supply pump pressure	800	5,2-5,7	kp/cm²		
1.3 Full-load delivery without charge-air pressure	900	56,5-57,5	cm ³ /1000 strokes		2,5
Full-load delivery with charge air			cm ³ /1000 strokes		
pressure 1 4 Idle speed regulation	250	12,0-18,0	cm ³ /1000 strokes		3,0
1 5 Start	100	mind.80,0	cm ³ /1000 strokes		
1.6 Full-load speed regulation	1180	26,0-34,0	cm ³ /1000 strokes		

2. Test Sp	ecificatio	NS Checking value			
2.1 Timing device	rev/min	390-520(360-	550) 60	008 00	1050-1200
	mm	Start	0,8-1,8(0,5	5-2,1)(1,9-3,5) 4,3-5,0(4,0-5,3)
22 Supply pump	rev/min	200		800	1150
	kp/cm [/]	2,5-3,0(2,3-3	3,2)	(5,0-5,9) 6,2-6,7(6,0-6,9)
Overflow delivery	rey/min	500			1150
	cm ³ /10 s	55-100(40-11)	0)		55-100(40-110)
23 Fuel deliveries					
Speed control lever	Delivery lever	rev/min	cm ³ /1000 strokes		Charge-air pressure kp/cm²
End stop	Full	1190-1230 (1170-1250) 1180 1150-1170 1120 900 500	0 Start 53,5-56,5 53,0-56,0	(25,0-35,0) (52,5-57,5) (56,0-58,0) (52,0-57,0)	
	Stop				
idi a stop	Full	280-370 (260-390) 250	0	(11,0-19,3)	
End stop	Start	100 150-250	mind.80,0	•	

BOSCH

Angle to the stop-plate	Pre-setting dimensions
Pump $\alpha = 25 \pm 4^{\circ}$ $\beta = 50 \pm 8^{\circ}$ $V = 30 - 8^{\circ}$ $\delta = 60 \pm 8^{\circ}$	Pump Oimension IV = 5,0 mm Dimension V = 24,6 mm

mm

WPP 001/4 IHC 5,8 d 3

1. Edition

VA 6/100 H 1150 CR 21-5

Setting in accordance with WPP 161/4,1st.

Supplement plunger lift 1.0 mm referenced to outlet "A".

Pre-stroke setting

Nozzle-and-holder assembly 1 688 901 020 (172 + 3 bar) supersedes company

IHC

engine

D 310

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

Test Intructions and Test Equipment

VDT-WPP 161/4 B

estoil-ISO 4113

			Pre-setting see reverse side		
1. Settings	rev/min	Settings		Charge-air press kp/cm²	Difference in delivery cm ³
1.1 Timing device travel	800	2,2-3,2	mm	 	
1.2 Supply pump pressure	800	4,6-5,1	kp/cm²		
1.3 Full-load delivery without charge-air pressure	800	59,5-60,5	cm ³ /1000 strokes		2,5
Full-load delivery with charge-air pressure			cm ³ /1000 strokes		
1.4 Idle speed regulation	350	7,0-13,0	cm ³ /1000 strokes	i	3,0
15 Start 196 bar	100	mind.90,0	cm ³ /1000 strokes		
1 6 Full-load speed regulation	1220	26,0-34,0	cm ³ /1000 strokes		

2.1 Timing device	rev/min	450-570(420-6 Start	00) 650 0,6-1,6(0,3	800 -1,9)(1,9-3,5)	1050-1160) 5,2-5,9(4,9-6,2)
		200		800	1150
22 Supply pump	rev/min kp/cm ⁸	1,7-2,2(1,3- 500	2,4)	(4,4-5,3) 5	,8-6,3(5,6-6,5) 1150
Overflow delivery	rev/min cm ³ /10 s	55-100(40-11	0)		55-100(40-110)
23 Fuel deliveries					
Speed control lever	Delivery lever	rev/min	cm³/1000 strokes		Charge-air pressure kp/cm ²
End stop	Full	1250-1260 (1230-1280) 1220 1150-1170 1130 800 500	Start 58,0-61,0 51,5-54,5	(25,0-35,0) (57,0-62,0) (59,0-61,0) (50,5-55,5)	
	Stop	1150	0		
idle stop	Full	370-420 (350-440) 350	0	(6,0-14,0)	
	Start	100	mind.90,0		
End stop		220-300		•	

Angle to the stop plate	Pre-setting dimensions
Pump $\alpha = 25 \pm 4^{\circ}$ $\beta = 50 \pm 8^{\circ}$ $\gamma = 30 - 8^{\circ}$ $\delta = 60 \pm 8^{\circ}$	Pump Dimension IV Dimension V = 26,0 mm

WPP 001/4 IHC 3,9 n

2. Edition

VA 4/100 H 1050 CR 12-4

supersedes

6.78

company

engine

IHC D 359

Nozzle-and-holder assembly 1 688 901 020 (172 + 3 bar)

All test specifications are valid for Bosch Fuel Injection Pump Test Benches

Test Intructions and Test Equipment

VDT-WPP 161/4 B

Pre-setting see reverse side

Pre-stroke setting 0,5 mm \pm 0,02 (\pm 0,04) Plunger lift of 1,0 mm related to outlet "A"

Testoil-ISO 4113

			* 1	e-sening see levels	
1. Settings	rev/min	Settings		Charge-air press kp/cm ²	Difference in delivery cm ³
1 1 Timing device travel	800	3,9-4,9	mm		
1.2 Supply pump pressure	800	4,8-5,3	kp/cm²		
1.3 Full-load delivery without charge-air pressure	800	72,5-73,5	cm ³ /1000 strakes		2,5
Full-load delivery with charge-air pressure			cm ³ /1000 strokes		
1.4 Idle speed regulation	350	15,0-21,0	cm ³ /1000 strokes		3,0
15 Start 196 bar	100	mind.85,0	cm ³ /1000 strokes		
1.6 Full-load speed regulation	1100	31,0-39,0	cm 71000 strokes		

2. Test Sponsor	rev/min kp/cm² rev/min cm³/10 s	Checking value 300-450(270- Start 200 2,6-3,1(2,4- 500 55-100(40-11	480) 2,1-3,1 3,3)	600 (1,8-3,4)	800 (4,6-5,5)	880-1030 8)5,2-5,9(4,9-6,2) 1050 5,8-6,3(5,6-6,5) 1050 5-100(40-110)
23 Fuel deliveries						
Speed control lever	Delivery lever	rev/min	cm ¹ /1000 strokes		Charge-a	nr pressure kp/cm²
End stop	Full	1140-1200 (1120-1220) 1100 1050-1070 1030 800 500	0 Start 71,0-74,0 69,5-72,5	(72,0-74	5.0) 1.0)	
	Stop	1050	0			
Idle stop	Full	410-480 (390-500) 350	0	(14,0-2	2,0)	
End stop	Start	100 220-320	mind.85,0			

Angle to the stop-plate	Pre-setting dimensions
Pump $\alpha = 25 \pm 4^{\circ}$ $\beta = 40 \pm 8^{\circ}$ $\gamma = 30 - 8^{\circ}$ $\delta = 60 \pm 8^{\circ}$	Pump Dimension IV = 4,00 mm Dimension V = 24,65 mm

WPP 001/4 IHC 5,1 h 1

1. Edition

VA 6/100 H 1250 CR 80 0 460 306 157

supersedes

company IHC

engine

D 310

Nozzle-and-holder assembly 1 688 901 020 (172 + 3 bar)

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

Test Intructions and Test Equipment

VDT-WPP 161/4 B

Pre-setting see reverse side

Pre-stroke setting

2. Test Specifications

Pre-stroke setting 0.7 mm ± 0.04 Plunger lift of 1.0 mm related to outlet "A"

1. Settings	rev/min	Settings		Charge-air press kp/cm ²	Difference in delivery cm ³
1 Timing device travel	1000	4,0-4,8	mm		
1 2 Supply pump pressure	1000	5,0-5,5	kp/cm²		
1 3 Full-load delivery without charge-air pressure	700	60,0-61,5	cm ³ /1000 strokes		2,5
Full-load delivery with charge-air pressure			cm ³ /1000 strokes		
1 4 Idle speed regulation	450	9,0-15,0	cm ³ /1000 strokes		3,0
15 Start 196 bar	100	mind.90,0	cm ³ /1000 strokes		
16 Full-load speed regulation	1300	16,0-24,0	cm 1/1000 strokes		

Checking values in brackets

2. Test opt	rev/min	400-540(370-	570)	1000	1100-1250
	mm	Start		(3,7-5,1)	5,2-5,9(4,9-6,2)
2 2 Supply pump	rev/min kp/cm²	200 1,2-1,7(1,0-	1,9)	1000 (4,8-5,7)	1250 5,9-6,4(5,7-6,6)
Overflow delivery	rev/min cm³/10 s				
23 Fuel deliveries					
Speed control lever	Delivery lever	rev/min	cm³/1000 stroke	s	Charge-air pressure kp/cm ²
End stop	Full	1320-1390 (1300-1410) 1300 1200 700 500		(15,0-25,0) (65,0-70,0) (60,0-62,0) (55,0-60,0)	
	Stop	1250	0		
Idle stop	Full	570-630 (550-650) 450	0	(8,0-16,0)	
End stop	Start	100 220-300	mind.90,0	•	

Angle to the stop-plate	Pre-setting dimensions	
Pump a = 25 ± 4° B = 45 ± 8° V = 30 - 8° b = 60 ± 8°	Pump Dimension IV = 1,5 mm Dimension V = 24,6 mm	

WPP 001/4 IHC 4,4 d 1

1. Edition

VA 4/11 H 1250 CR 93-2 0 460 314 045

supersedes

company

IHC

engine

D 268/510

Nozzle-and-holder assembly 1 688 901 020 (172 + 3 bar)

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

Test Intructions and Test Equipment

VDT-WPP 161/4 B

Pre-setting see reverse side

Pre-stroke setting 0,5 mm Plunger lift of 1,0 mm related to outlet "A"

1.	Settings	rev/min	Settings		Charge-air press kp/cm	Difference in delivery cm ³
11	Timing device travel	1000	6,0-7,0	mm		
1 2	Supply pump pressure	1000	5,5-6,0	kp/cm²		
13	Full-load delivery without charge-air pressure	800	82,0-83,0	cm ³ /1000 strokes		2,5
	Full-load delivery with charge-air pressure			cm ³ /1000 strokes		!
14	Idle speed regulation	400	12,0-18,0	cm ³ /1000 strokes		3,0
15	Start	100	mind.95,0	cm³/1000 strokes		
16	Full-load speed regulation	1330	34,0-42,0	cm ¹ /1000 strokes		
	Test Specificatio	ns Checking valu	es in brackets	1000	1	250

2. Test Sp	ecificatio	NS Checking value	es in brackets		
2 1 Timing device rev/min 500		500		1000	1250
	mm	0,8-1,8(0,6-	2,0)	(5,7-7,3)	7,0-7,7(6,7-8,0)
2.2 Supply pump	rev/min	200		1000	1250
	kp/cm²	1,5-2,0(1,3-	2,2)	(5,3-6,2)	6,2-6,7(6,0-6,9)
Overflow delivery	rev/min	500			1250
	cm ³ /10 s	55-100(40-	110)		55-100(40-110)
23 Fuel deliveries					
Speed control lever	Delivery lever	rev/min	cm ³ /1000 strokes		Charge-air pressure kp/cm/
End stop	Full	1400-1450 (1380-1470) 1330 1200 800 500	0 82,5-85,5 76,5-79,5	(33,0-43,0) (81,5-86,5) (81,5-83,5) (75,5-80,5)	
	Stop	1250	0		
Idle stop	Full	470-520 (450-540) 400	0	(11,0-19,0)	
	Start	100	mind.95,0		
End stop		220-340		•	

Testoil-ISO 4113

Angle to the stop-plate Pre	re-setting dimensions
$\alpha = 25 \pm 4^{\circ}$	ump imension IV = - mm imension V = - mm

D10

En

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WPP 001/4 IHC 5,8 e 3 1. Edition

n

VA 6/100 H 1250 CR 83 0 460 306 166 supersedes

IHC

company engine D 358

Nozzle-and-holder assembly 1 688 901 020 (172 + 3 bar)

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers Test Intructions and Test Equipment

VDT-WPP 161/4 B

Pre-setting see reverse side

Pre-stroke setting 0.4 mm \pm 0.04 Plunger lift of 1.0 mm related to outlet "A"

1. Settings	rev/min	Settings		Charge air press kp/cm ²	Difference in delivery cm ³
1.1 Timing device travel	800	2,9-3,9	mm		
1.2 Supply pump pressure	800	4,6-5,1	kp/cm²		
1.3 Full-load delivery without charge air pressure	1000	72,0-73,0	cm ³ /1000 strokes		2,5
Full-load delivery with charge	air		cm ³ /1000 strokes		
pressure 1.4 Idle speed regulation	450	17,0-23,0	cm 1/1000 strokes	{	3,0
15 Start 196 bar	100	mind.85,0	cm ³ /1000 strokes		
1.6 Full-load speed regulation	1300	21,0-29,0	cm ³ /1000 strokes		

2. Test Sp	ecification	NS Checking value	s in brackets				
	rev/min	500		800		1100	
	mm	0,6-1,6(0,3-	1,9)	(2,6-4,2)	4,4-	5,4(4,1-5,7)	
2.2 Supply pump	rev/min	200		800		1250	
	kp/cm²	1,6-2,1(1,4-	2,3)	(4,4-5,3)	6,1-	6,6(5,9-6,8)	
Overflow delivery	rev/min	500				1250	
	cm ³ /10 s	55-100(40-11	0)		55-1	00(40-110)	
23 Fuel deliveries							
Speed control lever	Delivery lever	rev/min	cm ³ /1000 st	rokes	Chi	arge-air pressure kp/cm²	
End stop	Full	1330-1380 (1310-1400) 1300 1240-1300 1220 1000 500	0 Start 71,5-74 61,5-64	(20,0- 4,5 (70,5- (71,5- 4,5 (60,5-	75,5)		
idle stop	Full	650-750 (630-770) 450	0	(16,0-	-24,0)		
End stop	Start	100 220-300	mind.8	5,0			

Festoil-ISO 4113

D11

BOSCH

Geschaftsbereich KH. Kundendienst. Kfz-Ausrustung. 4. 1980 by Robert Bosch GmöH. Postfach S0, D-7000 Stuttgart 1. Printed in the Federal Republic of Germany Imprimé en République Fédérale d'Allemagne par Robert Bosch GmbH.

Pre-setting dimensions

Dimension IV = 2,0 mm

Dimension v = 24,6 mm

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Angle to the stop-plate

 $\alpha = 25 \pm 4^{\circ}$

 $= 50 \pm 8^{\circ}$ = 30 - 8°

= 60 ± 8°

.5

Pump

WPP 001/4 IHC 5,8 u 2

2. Edition

Nozzle-and-holder assembly

VA 6/10 H 1050 CR 413 CR 413 P 0 460 306 256

supersedes company

10.81 IHC

D 358/923

engine

1 688 901 020 (172 + 3 bar) All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

re-stroke setting 0,3 mm lunger lift of 1,0 mm	related to	Test Intructions and Test Equipment VDT-WPP 161/4 B Pre-setting see reverse side			
1. Settings	rev/min	Settings		Charge-air press kp/cm ²	Difference in deliver cm ³
1 1 Timing device fravet	800	4,1-4,9	mm		
1 2 Supply pump pressure	800	5,0-5,5	kp/cm²		
1.3 Full-load delivery without charge-air pressure	800	70,0-71,5	cm 1/1000 strokes		2,5
Full-load delivery with charge-air			cm ³ /1000 strokes		
pressure 1 4 idle speed regulation	450	17,0-23,0	cm 1/1000 strokes		3,0
1 5 Start	100	mind.70,0	cm ³ /1000 strokes		
1 6 Full-load speed regulation	1090	36,0-44,0	cm ³ /1000 strokes		

2 Tool Co	politicatio	ne aller	o io brackets		
2. Test Sp		NS Checking value	500	800	1050
2.1 Timing device	rev/min				
	mm .	ł		(3,8-5,2)	5,2-5,9(4,9-6,2)
2.2 Supply pump	rev/min	200	800		1050
Ziz Gappi, pamp	kp/cm²	1,9-2,4(1,7-	2,6) (4,8-5	,7)	5,9-6,4(5,7-6,6)
	1	500			1050
Overflow delivery	rev/min	55-100(40-1	10)		55-100(40-110)
	cm ³ /10 s	55-100(40-1			33 100(40 110)
23 Fuel deliveries				,	
Speed control lever	Delivery lever	rev/min	cm ³ /1000 strokes		Charge-air pressure kp/cm²
End stop	Full	1120-1180 (1100-1200) 1090 1050-1070 1000 800 500	Start	(35,0-45,0) (70,75-75,25 (70,0-72,0) (68,5-74,5)	
	Stop	1050	0		
idle stop	Full	550-630 (530-650) 450	0	(16,0-24,0)	
	Start	100	mind.70,0		
End cton	Start	260-360			
End stop	_L	200-300		·	

Angle to the stop-plate	Pre-setting dimensions
Pump $\alpha = 25 \pm 4^{\circ}$ $\beta = 45 \pm 8^{\circ}$ $Y = 30 - 8^{\circ}$ $\delta = 60 + 8^{\circ}$	Pump Dimension IV = 2,2 mm Dimension V = 24,65 mm

WPP 001/4 IHC 2,9 d

3. Edition

VA 3/100 H 1090 CR 43-3

Setting of the pointer at a stroke of 1 mm in

relation to outlet "A".

Nozzle-and-holder assembly

4.79 supersedes IHC company D 155 engine

1 688 901 020 (172 + 3 bar)

All test specifications are valid for Bosch Fuel Injection Pump Test Benches

Test Intructions and Test Equipment

VDT-WPP 161/4 B Pre-setting see reverse side

Pre-stroke setting

 $0,3 \quad mm \pm 0,02(\pm 0,04)$

1. Settings	rev/min	Settings		Charge-air press kp/cm ²	Difference in delivery cm ³
1 1 Timing device travel	900	4,6-5,4	mm		
1.2 Supply pump pressure	900	4,7-5,2	kp/cm²		
1.3 Full-load delivery without charge-air pressure	800	72,5-73,5	cm ³ /1000 strokes		2,5
Full-load delivery with charge-air pressure			cm ³ /1000 strokes		
1.4 Idle speed regulation	400	14,0-20,0	cm ³ /1000 strokes	į	
15 Start 196 bar	100	mind.90,0	cm ³ /1000 strokes		
1.6 Full-load speed regulation	1150	36,0-44,0	cm 1/1000 strokes		

2. Test Spe	cificatio	NS Checking value	s in brackets	000	1000
2.1 Timing device	rev/min	500		900	1090
	mm	1,5-2,5(1,2-	2,8) (4	,4-5,6)	5,2-5,9(4,9-6,2)
2 2 Supply pump	rev/min	200		900	1090
1	kp/cm²	1,5-2,0(1,3-	2,2) (4	,5-5,4)	5,4-5,9(5,2-6,1)
	,	500			1090
	rev/min cm³/10 s	55-100(40-11	0)		55-100(40-110)
23 Fuel deliveries					
Speed control leve:	Delivery lever	rev/min	cm³/1000 strokes		Charge-air pressure kp/cm/
End stop	Full	1190-1250 (1170-1270) 1150 1050 800 500	0 75,7-78,3 70,5-73,5	(35,0-45,0) (74,7-79,3) (72,0-74,0) (69,5-74,5)	
	Stop	1090	0		
Idle stop	Full	480-550 (460-570) 400	0	(13,0-21,0)	
End stop	Start	100 220-340	mind.90,0	•	

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Angle to the stop-plate	Pre-setting dimensions
Pump $\alpha = 25 \pm 4^{\circ}$ $\beta = 48 \pm 8^{\circ}$ $v = 30 - 8^{\circ}$ $\delta = 60 + 8^{\circ}$	Pump Dimension IV = 1,60 mm Dimension V = 24,65 mm

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WPP 001/4 I:C 5,1 b 1 2. Edition

n

VA 6/100 H 1100 CR 37 Setting of the pointer at a stroke of 1 mm in relation to outlet "A".

supersedes 4.73 company IHC engine D 310

Nozzle-and-holder assembly 1 688 901 020 (172 + 3 bar)

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers Test Intractions and Test Equipment

VDT-WPP 161/4 B
Pre-setting see reverse side

Pre-stroke setting

 $0.3 \text{ mm} \pm 0.04$

1. Settings	rev/min	Settings		Charge-air press kp/cm ²	Difference in delivery cm ³
1.1 Timing device travel	700	2,6-3,4	mm		
1.2 Supply pump pressure	700	5,4-5,9	kp/cm²		
1.3 Full-load delivery without charge-air pressure	800	59,0-60,0	cm³/1000 strokes		2,5
Full-load delivery with charge-ai	r		cm ³ /1000 strokes		
pressure 1 4 Idle speed regulation	300	7,0-13,0	cm ³ /1000 strokes		3,0
15 Start 196 bar	100	mind.95,0	cm ³ /1000 strokes		
1.6 Full-load speed regulation	1150	36,0-44,0	cm ³ /1000 strokes		

2. Test Spe	ecificatio	ns Checking value			
2.1 Timing device	rev/min	320-420(290-	450)	700	900-
	mm	Start		(2,3-3,7)	5,2-5,9(4,9-6,2)
22 Supply pump	rev/min	100		700	1100
Z z Goppiy pomp	kp/cm ²	0,8-1,8(0,6-	2,0)	(5,2-6,1)	6,8-7,3(6,6-7,5)
!	1=	500			1100
Overflow delivery	rev/min cm ³ /10 s	55-100(40-1	10)		55-100(40-110)
23 Fuel deliveries					
Speed control lever	Delivery lever	rev/min	cm ³ /1000 strokes		Charge-air pressure kp/cm²
End stop	Full	1200-1270 (1180-1290) 1150 1050 800 500	62,5-65,5	(35,0-45,0) (61,5-66,5) (58,0-61,0) (56,5-61,5)	
	Stop	100	mind.95,0		
idle stop	Full	370-420 (350-440) 300	0	(6,0-14,0)	,
End stop	Start	100 220-300	mind.95,0	•	·

Testoil-ISO 4113

D17

BOSCH

Angle to the stop-plate	Pre-setting dimensions
Pump $\alpha = 25 \pm 4^{\circ}$ $\beta = 40 \pm 8^{\circ}$ $\gamma = 30 - 8^{\circ}$ $\delta = 60 \pm 8^{\circ}$	Pump Dimension IV = 4,5 mm Dimension V = 24,6 mm

D18

WPP 001/4 IHC 5,8 e 1. Edition

VA 6/100 H 1050 CR 81 0 460 306 162

supersedes

company engine

IHC D 358

Nozzle-and-holder assembly 1 688 901 020 (172 + 3 bar)

All test specifications are valid for Bosch Fuel Injection Pump Test Benches

and Testers

Test Intructions and Test Equipment

VDT-WPP 161/4 B

Pre-setting see reverse side

Pre-stroke setting

0,3 mm ± 0.04

Plunger lift of 1,0 mm related to outlet "A"

Charge-air press Difference in delivery cm³ 1. Settings 3,7-4,7 800 mm 1.1 Timing device travel 800 6,0-6,5 1 2 Supply pump pressure kp/cm² 700 69,5-70,5 2,5 cm³/1000 strokes 1 3 Full-load delivery without charge-air pressure cm³/1000 strokes Full-load delivery with charge-air 350 7,0-13,0 3,0 cm³/1000 strokes 1.4 Idle speed regulation 100 mind.85.0 196 bar cm³/1000 strokes 1 5 Start 1130 26,0-34,0 cm³/1000 strokes 1.6 Full-load speed regulation

2.1 Timing device	rev/min	Onecking value 250-400(220-	430)	800	950-1070
	mm	Start		(3,4-5,0)	5,1-5,8(4,8-6,1)
2 2 Supply pump Overflow delivery	rev/min kp/cm² rev/min cm³/10 s	200 2,5-3,0(2,3- 500 55-100(40		800 (5,8-6,7)	1050 6,9-7,4(6,7-7,6) 1050 55-100(40-110)
2.3 Fuel deliveries					
Speed control lever	Delivery lever	rev/min	cm ³ /1000 stroke	es .	Charge air pressure kp/cm
End stop	Full	1160-1220 (1140-1240) 1130 1000 700 500	70,0-73,0	(25,0-35,0) (69,0-74,0) (69,0-71,0) (64,0-69,0)	
	Stop	1050	0		
idle stop	Full	480-550 (460-570) 350	0	(6,0-14,0)	

Testoil-ISO 4113

D19

BOSCH

End stop

Start

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mind.85,0

100

220-300

Angle to the stop-plate	Pre-setting dimensions
Pump	Pump Dimension IVF 4,5 mm
$\alpha = 25 \pm 4^{\circ}$	
$\beta = 45 \pm 8^{\circ}$	Dimension V= 24,6 mm
$^{\gamma} = 30 - 8^{\circ}$	
δ = 60 ± 8°	

WPP 001/4 STE 4,6 a 3. Edition

En

VA 4/90 H 1200 CR 144-2 0 460 394 042 supersedes 4.80 company Steyr engine WD 411.41

Nozzle-and-holder assembly 1 688 901 020 (172 + 3 bar)

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers Test Intructions and Test Equipment

VDT-WPP 161/4 B

,04)

Pre-setting see reverse side

Pre-stroke setting

 $0.3 \text{ mm} \pm 0.02 (\pm 0.04)$

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Test	

				e setting see ic vors	
1. Settings	rev/min	Settings		Charge-air press kp/cm ²	Difference in delivery cm ³
1 1 Timing device travel	1000	3,9-4,7	mm		
1 2 Supply pump pressure	1000	5,1-5,6	kp/cm²		
1.3 Full-load delivery without	900	55,5-57,5	cm ³ /1000 strokes		2,5
charge-air pressure Full-load delivery with charge-air			cm ³ /1000 strokes		
pressure 1.4 Idle speed regulation	300	13,0-19,0	cm ³ /1000 strokes		3,0
1 5 Start	100	mind.70,0	cm ³ /1000 strokes		
1 6 Full-load speed regulation	1280	23,0-31,0	cm ³ /1000 strokes		

2. Test Sp	ecificatio	ns Checking value	s in brackets	4000	4000
2.1 Timing device	rev/min	700		1000	1200
	mm	0,8-1,8(0,5-	2,1)	(3,6-5,0)	5,8-6,6(5,5-6,9)
a.a. Sweets asses	rev/min	200		1000	1200
2.2 Supply pump	kp/cm²	1,2-1,7(1,0-	1,9)	(4,9-5,8)	6,0-6,5(5,8-6,7)
		500			1200
Overflow delivery	rev/min cm ³ /10 s	55-100(40-	110)		55-100(40-110)
23 Fuel deliveries	<u></u>				
Speed control lever	Delivery lever	rev/min	cm ³ /1000 stroke	s	Charge-air pressure kp/cm ²
End stop	Full	1330-1380 (1310-1400) 1280 1150 900 500	0 59,5-60,5 48,5-51,5	(22,0-32,0) (59,0-61,0) (54,5-58,5) (47,5-52,5)	
	Stop	1200	0		
Idle stop	Full	420-470 (400-490) 300	0	(12,0-20,0)	
End stop	Start	100 150-250	mind.70,	0 .	

Angle to the stop-plate	Pre-setting dimensions
Pump $\alpha = 25 \pm 4^{\circ}$ $\beta = 45 \pm 8^{\circ}$ $\gamma = 30 - 8^{\circ}$ $\delta = 60 + 8^{\circ}$	Pump Dimension IV = 4,60 mm Dimension V = 24,65 mm

WPP 001/4 STE 4,0 c

engine

2. Edition

VA 4/100 H 1200 CR 145-3 0 460 304 235

Pre-stroke setting

supersedes 3.77 Steyr company WD 412.41

Nozzle-and-holder assembly 1 688 901 020 (172 + 3 bar)

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers Test Intructions and Test Equipment

VDT-WPP 161/4 B

 $0.3 \text{ mm} \pm 0.02 (\pm 0.04)$

Testoil-ISO 4113

			F1	e-setting see revers	36 3/46
1. Settings	rev/min	Settings		Charge-air press kp/cm ²	Difference in delivery cm ³
1.1 Timing device travel	1000	6,8-7,6	mm		
1 2 Supply pump pressure	1000	5,0-5,3	kp/cm²		
1.3 Full-load delivery without charge-air pressure	1230	80,0-81,0	cm ³ /1000 strokes		2,5
Full-load delivery with charge-air pressure			cm ³ /1000 strokes		
1.4 Idle speed regulation	300	10,0-16,0	cm ⁴ /1000 strokes		3,0
1.5 Start	100	mind.80,0	cm³/1000 strokes		
1 6 Full-load speed regulation	1320	36,0-44,0	cm ² /1000 strokes		

2. Test Sp 21 Timing device	ecificatio	ns Checking value 300-450(270-4	s in brackets 480)	1000	1130-1270
	mm	Start		(6,5-7,9)	8,9-9,6(8,6-9,9)
		200		1000	1200
22 Supply pump	rev/min kp/cm²	1,3-1,8(1,1-	2,0)	(4,8-5,7)	5,8-6,3(5,6-6,5)
	KD/CIII	500			1200
Overflow delivery	rev/min cm³/10 s	55-100(40-11	0)		55-100(40-110)
23 Fuel deliveries					
Speed control lever	Delivery lever	rev/min	cm ³ /1000 strokes	•	Charge-air pressure kp/cm²
End stop	Full	1360-1410 (1340-1430) 1320 1260-1290 1230 900 500		(35,0-45,0) (79,5-81,5) (78,0-82,0) (76,5-81,5)	
idle stop	Full	360-410 (340-430) 300	0	(9,0-17,0)	
•	Start	100	mind. 80,	0	
End stop		120-220			

Angle to the stop-plate	Pre-setting dimensions
Pump $\alpha = 25 \pm 4^{\circ}$ $\beta = 40 \pm 8^{\circ}$ $\gamma = 30 - 8^{\circ}$ $\delta = < 68^{\circ}$	Pump Dimension IV = 1,80 mm Dimension V = 24,65 mm

WPP 001/4 STE 3,1 a

2. Edition

VA 4/100 H 1200 CR 145-4 0 460 304 237

supersedes

4.77

company

Steyr

engine

WD 408.43

Nozzle-and-holder assembly 1 688 901 020 (172 + 3 bar)

All test specifications are valid for **Bosch Fuel Injection Pump Test Benches** and Testers

Test Intructions and Test Equipment **VDT-WPP 161/4 B**

Pre-stroke setting

0,3 mm $\pm 0,02 (\pm 0,04)$

2. Test Specifications Checking values in brackets

		Pre-setting see reverse side		
rev/min	Settings		Charge-air press kp/cm ²	Difference in delivery cm ³
1000	3,4-4,2	mm		
1000	4,7-5,2	kp/cm²		
1180	65,0-66,0	cm³/1000 strokes		2,5
-		cm ³ /1000 strokes		
250	12,0-18,0	cm ³ /1000 strokes		3,0
100	mind.80,0	cm³/1000 strokes	,	
1270	36,0-44,0	cm ³ /1000 strokes		
	1000 1000 1180 - 250 100	1000 3,4-4,2 1000 4,7-5,2 1180 65,0-66,0 	1000 3,4-4,2 mm 1000 4,7-5,2 kp/cm² 1180 65,0-66,0 cm³/1000 strokes - cm³/1000 strokes 12,0-18,0 cm³/1000 strokes 100 mind.80,0 cm³/1000 strokes	Tev/min Settings Charge-air press kp/cm²

2.1 Timing device	rev/min	480-630(450-	660)	1000	1140-1300
	mm	Start		(3,1-4,5)	5,1-5,8(4,8-6,1)
2 2 Supply pump	rev/min	200		1000	1200
	kp/cm²	1,2-1,7(1,0-	1,9)	(4,5-5,4)	5,5-6,0(5,3-6,2)
Overflow delivery	rev/min	508			1200
Overnow delivery	cm³/10 s	55-100(40-1	10)		55-100(40-110)
23 Fuel deliveries					
Speed control lever	Delivery lever	rev/min	cm ³ /1000 strokes	3	Charge-air pressure kp/cm/
End stop	Full	1320-1370 (1300-1390) 1270 1220-1260 1180 900 500	0 Start 69,0-71,0 62,0-65,0	(35,0-45,0) (64,5-66,5) (68,0-72,0) (61,0-66,0)	
	Stop	1200	0		
idle stop	Fuil	330-380 (310-400) 250	0	(11,0-19,0)	
•	Start	100	mind. 80,0)	
End stop		120-220		•	

Angle to the stop-plate	Pre-setting dimensions
$\alpha = 25 \pm 4^{\circ}$	Pump Dimension IV = 3,40 mm Dimension V = 24,65 mm

WPP 001/4 STE 4,0 d

3. Edition

VA 4/10 H 1200 CR 145-5 0 460 304 246

2. Test Specifications

supersecies

engine

3.80

company

Steyr WD 411.85

Nozzle-and-holder assembly 1 688 901 020 (172 + 3 bar)

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

Test Intructions and Test Equipment

VDT-WPP 161/4 B

Pre-setting see reverse side

Pre-stroke setting

 $0.3 \text{ mm} \pm 0.02 (\pm 0.04)$

Festoil-ISO 4113

Difference in delivery cm ³
2,5
3,0

Checking values in brackets

2.1 Timing device	rev/min	600		1000		1200
	mm	1,4-2,2(1,1-	2,5)	(5,4-6,8)	7	,7-8,4(7,3-8,7)
2 2 Supply pump	rev/min	200		1000		1200
	kp/cm²	1,1-1,6(0,9-	1,8)	(4,8-5,7)	5	,8-6,3(5,6-6,5)
Overflow delivery	rev/min	500				1200
,	cm ³ /10 s	55-100(40-11	0)		5	5-100(40-110)
23 Fuel deliveries						
Speed control lever	Delivery lever	rev/min	cm³/1000	strokes		Charge-air pressure kp/cm²
End stop	Full .	1330-1380 (1310-1400) 1280 1180 1000 500	71,5-7 62,5-6	(30,0-40,0 (67,5-69,5 73,5 (70,5-74,5 55,5 (61,5-66,5	5) 5)	
	Stop	1200	0			
Idle stop	Full	470-530 (450-550) 350	0	(9,0-17,0)		
	Start	100	mind.	70,0		·
End stop		120-220				

Angle to the stop-plate	Pre-setting dimensions
Pump $\alpha = 25 \pm 4^{\circ}$ $\beta = 36 \pm 8^{\circ}$ $Y = 30 - 8^{\circ}$ $\delta = 60 + 8^{\circ}$	Pump Dimension IV = 4,00 mm Dimension V = 24,65 mm

WPP 001/4 PER 5,8 a 5. Edition

VA 6/110 H 1300 CL 179 0 460 316 017

5.76 supersedes **Perkins** company T 6 354 engine

Nozzle-and-holder assembly 1 \$88 901 020 (172 + 3 bar)

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers Test Intructions and Test Equipment

VDT-WPP 161/4 B

Pre-setting see reverse side

Pre-stroke setting 0.3 mm \pm 0.02(\pm 0.04) Plunger lift of 1.0 mm related to outlet "A"

1. Settings	rev/min	Settings .		Charge-air press kp/cm ²	Difference in delivery cm ³
1 1 Juning device travel	500	4,6-5,2	mm	0	
1 2 Supply pump pressure	500	4,5-5,0	kp/cm ²	0	
1.3 Full-load delivery without	500	87,0-88,0	cm ³ /1000 strokes	0	2,5
charge-air pressure Full-load delivery with charge-air	900	98,5-99,5	cm ³ /1000 strokes	0,4	
pressure 1 4 Idle speed regulation	400	9,5-15,5	cm ³ /1000 strokes	0	3,0
1.5 Start	100	mind.100,0	cm ³ /1000 strokes	0	
1 6 Full-load speed regulation	1450	47,0-53,0	cm ³ /1000 strokes	0,4	

2. Test Sp	ecification	NS Checking value	s in brackets	
2.1 Timing device	rev/min mm	Start 140-240(110-2 1,3-2,3(1,0-2	270) 300 500 2,6) (4,3-5,5) 6,1-7,1(5	650 680-750 ,8-7,4)7,0-7,7(6,7-8,0)
2 2 Supply pump	rev/min kp/cm²	200 2,5-3,0(2,3-	500 (4,3-5,2)	1300 6,8-7,3(6,6-7,5)
Overflow delivery	rev/min cm ³ /10 s	500 55-100(40-11		1300 55-100(40-110)
23 Fuel deliveries				
Speed control lever	Delivery lever	rev/min	cm³/1000 strokes	Charge-air pressure kp/cm²
End stop	Full	1730-1875 1550 1450 1300 900 750 500	0 max.12,0 47,0-53,0 (46,0-54,0) 102-104 (101-105) (98,0-100,0) mind.96,5 (86,5-88,5)	0,4 0,4 0,4 0,4 0,4 0,4
	Stop	130.0	0	
ldle stop	Full	500-580 (480-600) 400	0 (8,5-16,5)	
	Start	100	mind.100,0	
End stop		100-200	•	

Angle to the stop-plate	Pre-setting dimensions
Pump α = 25 ± 4° β = 55 ± 8° γ	Pump Dimension IV= 0,6 mm Dimension V = 24,6 mm

WPP 001/4 IHC 3,9 r

2. Edition

VA 4/10 H 1150 CR 69-5

0 460 304 249

Setting of the pointer at a stroke of 1 mm in

relation to outlet "A".

Nozzle-and-holder assembly 1 688 901 020 (172 + 3 bar)

7.81 supersedes

IHC

D 239 engine

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

Test Intructions and Test Equipment

VDT-WPP 161/4 B

Pre-stroke setting

 $0.5^{\text{mm}} \pm 0.02 (\pm 0.04)$

			Pr	e-setting see revers	se side
1. Settings	rev/min	Settings		Charge-air press	Difference in delivery cm ³
1.1 Timing device travel	800	3,5-4,3	mm		
1 2 Supply pump pressure	800	5,6-6,1	kp/cm²		
1.3 Full-load delivery without charge-air pressure	800	76,5-77,5	cm ³ /1000 strokes		2,5
Full-load delivery with charge-air			cm ³ /1000 strokes		
pressure 1.4 Idle speed regulation	350	18,0-23,0	cm ³ /1000 strokes		3,0
15 Start 196 bar	100	mind.85,0	cm ³ /1000 strokes		
1 6 Full-load speed regulation	1220	36,0-44,0	cm ¹ /1000 strokes		

2. Test Spo	rev/min	NS Checking value 400		800	1150
- · · · · · · · · · · · · · · · · · · ·	mm	0,6-1,6(0,3-	1,9)	(3,2-4,6)	4,7-5,4(4,4-5,7)
2 2 Supply pump	rev/min	200		800	1150
	kp/cm²	2,6-3,1(2,4-	3,3)	(5,4-6,3)	6,8-7,3(6,6-7,5)
Overflow delivery	rev/min cm³/10 s	500 55-100(40-1	10)		1150 55-100(40-110)
23 Fuel deliveries					
Speed control lever	Delivery lever	rev/min	cm ³ /1000	strokes	Charge-air pressure kp/cm²
End stop	Full	1260-1310 (1240-1330) 1220 1130 800 500	73,5-3	(35,0-45,0 76,5 (72,5-75,0 (76,0-78,0 75,5 (71,5-76,5	5)
	Stop	1150	0		
Idle stop	Full	450-500 (430-520)	0		
		350		(17,0-24,0)
•	Start	100	mind.8	35,0	
End stop		220-340			

Pre-setting dimensions	· - - · · · ·
Pump = 4,00 mm. Dimension V = 24,65 mm	
	Pump = 4,00 mm

WPP 001/4 IHC 3,9 p

2. Edition

800

VA 4/10 H 1150 CR 69-7 0 460 304 251

Setting of the pointer at a stroke of 1 mm in

relation to outlet "A".

2. Test Specifications

2.1 Timing device | rev/min

Nozzle-and-holder assembly

7.80 supersedes IHC company D 239 engine

1 688 901 020 (172 + 3 bar)

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

1150

Test Intructions and Test Equipment

VDT-WPP 161/4 B Pre-setting see reverse side

Pre-stroke setting

 $\pm 0.02 (\pm 0.04)$ 0,5_{mm}

Festoil-ISO 4113

				c sering secretors	
1. Settings	fev/min	Settings		Charge-air press kp/cm ²	Difference in delivery cm ³
1.1 Timing device travel	800	3,1-3,9	mm	<u> </u> 	
1.2 Supply pump pressure	800	5,7-6,2	kp/cm²		
1.3 Full-load delivery without charge-air pressure	800	68,0-69,0	cm³/1000 strakes		2,5
Full-load delivery with charge-air pressure			cm ³ /1000 strokes		
1.4 Idle speed regulation	350	17,0-23,0	cm³/1000 strokes	İ	3,0
15 Start 196 bar	100	mind.90,0	cm ³ /1000 strokes		
1.6 Full-load speed regulation	1220	33,0-41,0	cm ¹ /1000 strokes		

Checking values in brackets 500

22 Supply pump Overflow delivery	mm rev/min kp/cm² rev/min cm³/10 s	1,0-2,0(0,7- 200 2,5-3,0(2,3- 500 55-100(40-11	3,2)	(2,8-4,2) 800 (5,5-6,4)	4,7-5,4(4,4-5,7) 1150 7,2-7,7(7,0-7,9) 1150 55-100(40-110)
2.3 Fuel deliveries Speed control lever	Delivery lever	rev/min	cm ³ /1000 stroke	s	Charge-air pressure kp/cm²
End stop	Full	1240-1290 (1220-1310) 1220 1100 800 500	0 74,5-77,5 62,0-66,0	(32,0-42,0) 5 (73,5-78,5) (67,5-69,5) 61,0-67,0)	
	Stop	11,50	0		
idle stop	Full	420-470 (400-490) 350	0	(16,0-24,0)	

End stop

Start

mind.90,0

100

220-340

Angle to the stop-plate	Pre-setting dimensions
Pump $a = 25 \pm 4^{\circ}$ $\beta = 46 \pm 8^{\circ}$ $v = 30 - 8^{\circ}$ $\delta = 60 \pm 8^{\circ}$	Pump Dimension IV = 2,60 mm Dimension V = 24,65 mm

Testoil-ISO 4113

E10

En

WPP 001/4 IHC 5,8 p 2 3. Edition

VA 6/100 H 1250 CR 195 CR 195 P supersedes

company IHC

engine

Nozzle-and-holder assembly 1 688 901 020 (172 + 3 bar)

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers Test Intructions and Test Equipment VDT-WPP 161/4 B

Pre-setting see reverse side

Pre-stroke setting 0,3 mm Plunger lift of 1,0 mm related to outlet "A"

1.	Settings	rev/min	Settings		Charge air press kp/cm	Difference in delivery cm ³
11	Timing device travel	1000	4,0-5,0	mm		
12	Supply pump pressure	800	4,6-5,1	kp/cm²		
13	Full-load delivery without charge-air pressure	800	73,0-74,0	cm ³ /1000 strokes		2,5
	Full-load delivery with charge-air pressure			cm ³ /1000 strokes		
14	Idle speed regulation	350	12,0-18,0	cm ³ /1000 strokes		3,0
15	Start	100	mind.90,0	cm ³ /1000 strokes		
16	Full-load speed regulation	1330	31,0-39,0	cm ³ /1000 strokes		

2. Test Sp	ecificatio	NS Checking valu	es in brackets			
2.1 Timing device	rev/min			00	1000	
	mm	Start	1,0-2,0	0(0,7-2,3)	(3,7-5,3)	
22 Supply pump	rev/min	200	80	00	1250	
	kp/cm ²	1,7-2,2(1,4-	2,5) (4,4-	-5,3)	6,2-6,7(6,0-6,9)	
Overflow delivery	rev/min	500			1250	
	cm ³ /10 s	55-100(40-1	10)		55-100(40-110)	
23 Fuel deliveries						
Speed control lever	Delivery lever	rev/min	cm ³ /1000 strokes		Charge-air pressure kp/cm ²	
End stop	Full	1380-1450 (1360-1470) 1330 1260-1280 1220 800 500	0 Start 76,5-79,5 68,5-71,5	(30,0-40,0) (75,5-80,5) (72,5-74,5) (67,5-78,5)	a	
	Stop	1250	0			
idie stop	Full	480-550 (460-570) 350	0	(11,0-19,0)		
	Start	100	 mind.90,0			
End stop		260-360			·	

E11

BOSCH

Festoil-ISO 4113

Angle to the stop-plate	Pre-setting dimensions
Pump $\alpha = 25 \pm 4^{\circ}$ $\beta = 55 \pm 8^{\circ}$ $\gamma = 30 - 8^{\circ}$ $\delta = 60 + 3^{\circ}$	Pump Dimension IV = 2,80 mm Dimension V = 24,65 mm

WPP 001/4 STE 4,0a 3

1. Edition

VA 4/90 H 1200 CR 164 0 460 394 010

supersedes company Steyr WD 408.40 engine

Nozzle-and-holder assembly 1 688 901 020 (172 + 3 bar)

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers Test Intructions and Test Equipment

VDT-WPP 161/4 B

Pre-setting see reverse side

Pre-stroke setting

 $0.3 \text{ mm} \pm 0.02 (\pm 0.04)$

				e-setting see revers	70 3.30
1. Settings	rev/min	Settings	•	Charge-air press kp/cm ²	Difference in delivery cm ³
1.1 Timing device travel	900	2,2-3,0	mm		
1 2 Supply pump pressure	900	4,8-5,3	kp/cm²		
1.3 Full-load delivery without	1200	62,0-63,0	cm ³ /1000 strokes		2,5
charge-air pressure Full-load delivery with charge-air			cm ³ /1000 strokes		
pressure 1.4 idle speed regulation	300	10,0-16,0	cm ³ /1000 strokes	1	3,0
1.5 Start	100	mind.75,0	cm ³ /1000 strokes		
1 6 Full-load speed regulation	1280	31,0-39,0	cm ³ /1000 strokes		

2. Test Sp	ecificati	ions Girzcking values in brackets		000 4050
2.1 Timing device	rev/min	590-700 (560-730)	900	920-1050
	mm	Start	(1,9-3,3)	2,9-3,6(2,6-3,9)
		200	900	1200
2 2 Supply pump	rev/min kp/cm ²	1,5-2,0(1,3-2,2)	(4,6-5,5)	5,6-6,1(5,4-6,3)
		500		1200
Overflow delivery	rev/min cm ³ /10 s	55-100(40-110)		55-100(40-110)

2	3	Fuel	deliv	reries

23 Fuel deliveries					
Speed control lever	Delivery lever	rev/min	cm ³ /1000 strokes		Charge-air pressure kp/cm/
End stop	Full	1330-1400 (1310-1420) 1280 1230-1250 1200 900 500	Start	(30,0-40,0) (61,5-63,5) (59,0-63,0) (55,0-61,0)	
	Stop	1200	0		
Idle stop	Full	400-470 (380-490) 300	0	(9,0-17,0)	
End stop	Start	100 130-230	mind.75,0		

Angle to the stop-plate	Pre-setting dimensions
Pump $\alpha = 25 \pm 4^{\circ}$ $\beta = 45 \pm 8^{\circ}$ $\gamma = 30 - 8^{\circ}$ $\delta = 60 + 8^{\circ}$	Pump Dimension IV 3,5 mm Dimension V 24,6 mm

WPP 001/4 IHC 2,4 a 2

1. Edition

VA 3/100 H 950 CR 43 Setting of the pointer at a stroke of 1 mm in relation to outlet "A".

supersedes

company

engine

IHC D 155

Nozzle-and-holder assembly 1 688 901 020 (172 + 3 bar)

All test specifications are valid for **Bosch Fuel Injection Pump Test Benches** and Testers

Test Intructions and Test Equipment VDT-WPP 161/4 B

Pre-setting see reverse side

Pre-stroke setting

Testoil-ISO 4113

 $0.3 \, \text{mm} \, \pm \, 0.04$

1.	Settings	rev/min	Settings		Charge air press kp/cm ²	Difference in delivery cm ³
11	Timing device travel	500	2,8-3,6	mm		
12	Supply pump pressure	500	4,3-4,8	kp/cm ²		
13	Full-load delivery without	800	59,0-60,0	cm ³ /1000 strokes		2,5
	charge-air pressure Full-load delivery with charge-air	-		cm ³ /1000 strokes		
14	pressure Idle speed regulation	400	9,5-15,5	cm ³ /1000 strokes		3,0
	Start 196 bar	100	mind.90,0	cm ³ /1000 strokes		
16	Full-load speed regulation	1000	33,5-41,5	cm ³ /1000 strokes		

2. Test Spe	ecificatio	NS Checking value		_		
2.1 Timing device	rev/min	120-250(90-2	80) 30	0	500	800-950
	mra	Start	0,8-1,8(0	,5-2,1)	(2,5-3,	9) 4,7-5,4(4,4-5,7)
2 2 Supply pump	rev/min	200			500	950
z z Goppi, pamip	kp/cm [®]	2,3-2,8(2,1-	3,0)		(4,1-5,	0) 6,0-6,5(5,8-6,7)
		500				950
Overflow delivery	rev/min cm ³ /10 s	55-100(40-11	0)			55-100(40-110)
23 Fuel deliveries						
Speed control lever	Delivery lever	rev/min	cm ³ /1000 strokes			Charge-air pressure kp/cm²
End stop	Full	1040-1090 (1020-1110) 1000 970-990 930 800 500	0 Start 60,5-63,5 54,5-57,5	(58,5-6	64,5) 60,5)	
	Stop	950	0			
Idle stop	Full	430-480 (410-500) 400	0	(8,5-1	6,5)	
	Start	100	mind.90,0	- -	•	
End stop		220-300				

Angle to the stop-plate	Pre-setting dimensions
Pump $\alpha = 25 \pm 4^{\circ}$ $\beta = 40 \pm 8^{\circ}$ $\gamma = 30 - 8^{\circ}$ $\delta = 60 \pm 8^{\circ}$	Pump Dimension IV= 1,0 mm Dimension V = 24,6 mm

WPP 001/4 STE 3,0 a

2. Edition

VA 4/90 H 1200 CR 144-1 0 460 394 035

supersedes company

4.77 Steyr WD 408.42

engine

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers Test Intructions and Test Equipment

VDT-WPP 161/4 B

Pre-setting see reverse side

Pre-stroke setting

Testoil-ISO 4113

 $\pm 0.02 (\pm 0.04)$ 0,3 mm

1. Settings	rev/min	Settings		Charge-air press kp/cm ²	Difference in delivery cm ³
1.1 Timing device travel	1000	4,7-5,5	mm		
1.2 Supply pump pressure	1000	5,1-5,6	kp/cm²		
1.3 Full-load delivery without	1150	57,5-58,5	cm ³ /1000 strokes		2,5
charge-air pressure Full-load delivery with charge-air			cm ³ /1000 strokes		
pressure 1.4 Idle speed regulation	250	12,0-18,0	cm ³ /1000 strokes		3,0
1.5 Start	100	mind.70,0	cm ³ /1000 strokes		
1 6 Full-load speed regulation	1280	21,0-29,0	cm ³ /1000 strokes		

Nozzle-and-holder assembly

1 688 901 020 (172 + 3 bar)

2. Test Sp	rev/min	ONS Checking values in brackets 470-620 (440-650)	1000	1150-1300
	mm	Start	(4,4-5,8)	7,0-7,7(6,7-8,0)
O. Comply gump	rev/min	200	1000	1200
2 Supply pump	kp/cm ²	1,5-2,0(1,3-2,2)	(4,9-5,8)	5,9-6,4(5,7-6,6)
	500		1200	
Overflow delivery	rev/min cm ³ /10 s	55-100(40-110)		55-100(40-110)

23	Fuel	deliveries
----	------	------------

Speed control lever	Delivery lever	rev/min	cm ³ /1000 strokes	Charge-air pressure kp/cm ²
End stop	Full	1310-1350 (1290-1370) 1280 1210-1240 1150 900 500	0 (20,0-30, Start (57,0-59, 56,0-58,0 (55,0-59, 49,0-52,0 (48,0-53,	0)
idle stop	Full	340-390 (320-410) 250	0 (11,0-19, mind. 70,0	0)
End stop	Start	120-220		

Angle to the stop-plate	Pre-setting dimensions
Pump $\alpha = 25 \pm 4^{\circ}$ $\beta = 45 \pm 8^{\circ}$ $Y = 30 - 8^{\circ}$ $\delta = < 68^{\circ}$	Pump Dimension IV 3,60 mm, Dimension V 24,65 mm

WPP 001/4 FIA 2,3 b 1 2. Edition

VA 3/110 H 1100 CL 134-3 0 460 313 013

Setting of the pointer at a stroke of 1 mm in relation to outlet "A".

Nozzle-and-holder assembly 1 688 901 20 (172 + 3 bar)

7.71 supersedes Fiat company 853 engine

Pre-stroke setting

 $0.7_{mm} \pm 0.02 (\pm 0.04)$

All test specifications are valid for Bosch Fuel Injection Pump Test Benches

Test Intructions and Test Equipment

VDT-WPP 161/4 B

			Pre-setting see reverse side			
1. Settings	rev/min	Settings		Charge-air press kp/cm ²	Difference in delivery cm ³	
1.1 Timing device travel	800	5,2-6,0	mm			
1 2 Supply pump pressure	800	5,0-5.5	kp/cm²			
1.3 Full-load delivery without charge-air pressure	800	62,5-63,5	cm ³ /1000 strokes		2,5	
Full-load delivery with charge-air			cm ³ /1000 strokes			
pressure 1 4 Idle speed regulation	300	17,0-23,0	cm ³ /1000 strokes		3,0	
1 5 Start	100	mind.120,0	cm ³ /1000 strokes			
1 6 Full-load speed regulation	1150	36,0-44,0	cm ³ /1000 strokes			

2. Test Sp	ecificatio	NS Checking value		000	4000 4400
2.1 Timing device	rev/min	300-450(270-4	420)	800	1000-1100
	mm	Start		(4,9-6,3)	8,0-8,7(7,7-9,0)
22 Supply pump	rev/min	200		800	1100
E C Cappiy point	kp/cm ²	1,6-2,1(1,4-	2,3)	(4,7-5,8)	6,3-6,8(6,0-7,1)
		500			1100
Overflow delivery	rev/min cm ³ /10 s	55-100(40-11	0)		55-100(40-110)
23 Fuel deliveries	<u> </u>				
Speed control lever	Delivery lever	rev/min	cm ³ /1000 strokes		Charge-air pressure kp/cm²
End stop	Full	1210-1260 (1190-1280) 1150 1100 800 500		(35,0-45,0) (56,5-61,5) (62,0-64,0) (55,0-61,0)	
	Stop	1100	0		
Idle stop	Full	350-400 (330-380) 300	0	(16,0-24,0)	
•	Start	100	mind.120,0		
End Stop	3.5.	110-230			

Angle to the stop-plate	Pre-setting dimensions
Pump $\alpha = 25 \pm 4^{\circ}$ $\beta = 40 \pm 8^{\circ}$ $\epsilon = 60 + 8^{\circ}$	Pump Dimension IV = 3,0 mm Dimension V = 24,6 mm

WPP 001/4 D00 4,8 a

2. Edition

VA 6/110 H 1400 CR 166 0 460 316 014

7.73

company

van Doorne

engine

·4 475

Nozzle-and-holder assembly 1 688 901 020 (172 + 3 bar)

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

Test Intructions and Test Equipment VDT-WPP 161/4 B

Pre-setting see reverse side

Pre-stroke cetting

 $0.5_{mm} \pm 0.02(\pm 0.04)$

1. Settings	rev/min	Settings		Charge-air press kp/cm ²	Oifference in delivery cm ³
1.1 Timing device travel	1000	5,5-6,5	mm		
1.2 Supply pump pressure	1000	5,3-5,8	kp/cm²		
1.3 Full-load delivery without	1000	53,5-54,5	cm ³ /1000 strokes		2,5
charge-air pressure Full-load delivery with charge-air			cm ³ /1000 strokes		
pressure 1 4 Idle speed regulation	250	9,0-15,0	cm ³ /1000 strokes	1	3,0
1 5 Start	100	mind.110,0	cm ³ /1000 strokes		
1.6 Full-load speed regulation	1470	31,0-39,0	cm ³ /1000 strokes		

2. Test Sp	ecificatio	NS Checking value			
21 Timing device	rev/min	270-420(240-4	150)	1000	1250-1400
	mm	Start		(5,2-6,8)	7,8-8,5(7,5-8,8)
22 Supply pump	rev/min	200		1000	1400
Z Z Guppiy pomp	kp/cm ²	1,6-2,1(1,4-2	2,3)	(5,1-6,0)	6,7-7,2(6,5-7,4)
		500			1400
Overflow delivery	rev/min cm ³ /10 s	55-100(40-110	2)		55-100(40-110)
23 Fuel deliveries					
Speed control lever	Delivery lever	rev/min	cm ³ /1000 strokes		Charge-air pressure kp/cm/
End stop	Full .	1500-1570 (1480-1590)	0		
		1470 1350 1000 500	52,5-55,5 49,5-52,5	(30,0-40,0) (51,5-56,5) (53,0-55,0) (48,5-53,5)	
	Stop	1400	0		
Idle stop	Full	270-320 (250-340) 250	0	(8,0-16,0)	
•	Start	100	mind.110,0		
End stop		110-210		•	

BOSCH

Angle to the stop-plate	Pre-setting dimensions
Pump $a = 25 \pm 4^{\circ}$ $\beta = 55 \pm 8^{\circ}$ $Y = 30 - 8^{\circ}$ $\delta = 60 + 8^{\circ}$	Pump Dimension IV 2,6 mm Dimension V= 24,6 mm

2. Test Specifications Checking values in brackets

WPP 001/FIA 2.3 b 2

1. Edition

VA 3/100 H 1200 CL 134-4 0 460 313 014

supersedes

company

engine

Fiat

Nozzle-and-holder assembly

853-10

1 688 901 020 (172 + 3 bar)

All test specifications are valid for Bosch Fuel Injection Pump Test Benches

Test Intructions and Test Equipment

VDT-WPP 161/4 B

Pre-stroke setting

0.7 mm ± 0.02 (± 0.04) Einstellung des

Testoil-ISO 4113

			*1	Se 310c	
1. Settings	rev/min	Settings	,	Charge-air press kp/cm ²	Difference in delivery cm ²
1.1 Timing device travel	800	45,5-46,5	mm		
1.2 Supply pump pressure	800	4,8-5,3	kp/cm²		
1.3 Full-load delivery without charge-air pressure	800	66,0-67,0	cm ³ /1000 strokes		2,5
Full-load delivery with charge-air			cm ³ /1000 strokes		
pressure 1 4 Idle speed regulation	300	17,0-23,0	cm ³ /1000 strokes		3,0
1.5 Start	100	mind.120,0	cm ³ /1000 strokes		
1.6 Full-load speed regulation	1300	36,0-44,0	cm ³ /1000 strokes		

2.1 Timing device	rev/min	300-450(270-	480)	800	1100-1230
	mm	Start		(4,25-4,95)	8,9-9,6(8,6-9,9)
22 Supply pump	rey/min	1,9-2,4(1,7-		800 (4,6-5,5)	1200 6,8-7,3(6,6- ⁻⁷ ,5)
Overflow delivery	rev/min cm ³ /10 s	55-100(40-11			1%១ 55-100(40-110)
23 Fuel deliveries					
Speed control lever	Delivery lever	rev/min	cm ³ /1000 strokes	s	Charge-air pressure kp/cm'
End stop	Fesil	1350-1430 (1330-1410) 1300 1180 800 500	i	(35,0-45,0) (59,5-64,5) (65,5-67,5) (58,0-64,0)	,
	Stop	1200	0		
idle stop	Full	330-390 (310-410) 300	0	(16,0-24,0)	
	Start	100	mind.120,	0	
		440 000	1		

End stop

110-230

Testoil-15O 4113

Angle to the stop plate	Pre-setting dimensions
Pump $\alpha = 25 \pm 4^{\circ}$ $\beta = 40 \pm 8^{\circ}$ $Y = 30 - 8^{\circ}$ $\delta = 60 + 8^{\circ}$	Pump Dimension IV = 3,5 mm Dimension V = 24,6 mm

WPP 001/FIA 2,6 b

3. Edition

VA 3/110 H 1300 CL 134-8

Nozzle-and-holder assembly 1 688 901 020 (172 + 3 bar) supersedes company

engine

6.79 Fiat 8035-02202

0 460 313 018

Setting of the pointer at a stroke of 1 mm in relation to outlet "A".

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

Test Intructions and Test Equipment

VDT-WPP 161/4 B

Pre-stroke setting

 $0.5 \text{ mm} \pm 0.02 (\pm 0.04)$

. . Pre-setting see reverse side

1.	Settings	rev/min	Settings		Charge-air press kp/cm ²	Difference in delivery cm ²
11	Timing device travel	900	4,7-5,5	mm		
12	Supply pump pressure	900	4,6-5,1	kp/cm²		
	Full-load delivery without	800	68,5-69,5	cm ³ /1000 strokes		2,5
	charge-air pressure Full-load delivery with charge-air			cm ³ /1000 strokes		
14	pressure Idle speed regulation	300	21,0-27,0	cm ³ /1000 strokes		3,0
15	Start	100	mind.110,0	cm ³ /1000 strokes		
16	Full-load speed regulation	1400	31,0-39,0	cm ³ /1000 strokes		

2. Test Sp 2.1 Timing device 2.2 Supply pump Overflow delivery	rev/min kp/cm ² rev/min cm ³ /10 s	1,2-2,2(0,9-2 200 1,7-2,2(1,5-2 500 55-100(40-110	2,5)	900 (4,4-5,8) 900 (4,4-5,3)	1100 6,0-6,7(5,7-7,0) 1300 5,7-6,2(5,5-6,4) 1300 55-100(40-110)
2.3 Fuel deliveries Speed control lever	Delivery lever	rev/min	cm ³ /1000 stroke	s	Charge-air pressure kp/cm ²
End stop	Fuli	1500-1550 (1480-1570) 1400 1280 800 500	0 65,0-68,0 60,5-63,5	(30,0-40,0) (64,0-69,0) (68,0-70,0) (59,5-64,5)	
	Stop	1300	0		
Idle stop	Full	420-470 (400-490) 300	0	(20,0-28,0)	
End stop	Start	100 110-230	mind.110,0)	

Angle to the stop plate	Pre-setting dimensions
Pump $\alpha = 25 \pm 4^{\circ}$ $\beta = 45 \pm 8^{\circ}$ $\gamma = 30 - 8^{\circ}$ $\delta = 60 + 8^{\circ}$	Pump Dimension IV = 0,60 mm Dimension V = 29,15 mm

WPP 001/4 FIA 2,3 a 1

2. Edition

VA 4/110 H 1200 CL 136 Nozzle-and-holder assembly 1 688 901 020 (172 + 3 bar) 0 460 314 016 Setting of the pointer at a stroke of 1 mm in relation to outlet "A".

7.71 Fiat company 8045 engine

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers Test Intructions and Test Equipment

VDT-WPP 161/4 B

Pre-stroke setting

Test Specifications

Testoil-ISO 4113

 $0.5 \text{ mm} \pm 0.02(\pm 0.04)$

c			, Pr	e-setting see revers	se side
1. Settings	rev/min	Settings		Charge-air press kp/cm ²	Difference in delivery cm ³
1.1 Timing device travel	800	3,7-4,5	mm		
1.2 Supply pump pressure	800	5,3-5,8	kp/cm²		
1.3 Full-load delivery without charge-air pressure	800	63,0-64,0	cm ³ /1000 strokes		2,5
Full-load delivery with charge-air			cm ³ /1000 strokes		
pressure 1 4 Idle speed regulation	300	17,0-23,0	cm ³ /1000 strokes	<u> </u>	3,0
1 5 Start	100	mind.130,0	cm ³ /1000 strokes		
1 6 Full-load speed regulation	1270	36,0-44,0	cm ³ /1000 strokes		
§₽					

2. lest Spe	ecification	15 Checking value 220-370(190-		800	1100-1230
	mm	Start		(3,4-4,8)	6,1-6,8(5,8-7,1)
2.2 Supply pump	rev/min	200	0.01	800	1200
Overflow delivery	kp/cm ² rev/min cm ³ /10 s	1,6-2,1(1,4- 500 55-100(40-11		(5,1-6,0)	6,8-7,3(6,6-7,5) 1200 55-100(40-110)
23 Fuel deliveries		<u></u>			
Speed control lever	Delivery lever	rev/min	cm ³ /1000 strokes		Charge-air pressure kp/cm ²
End stop	Full	800	0 60,0-63,0 59,5-62,5	(35,0-45,0) (60,0-69,0) (62,5-64,5) (58,5-63,5)	
	Stop	1200	0		
idle stop	Full	300-400 (280-420) 300	0	(16,0-24,0)	
End stop	Start	100 110-230	mind.130,0		

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Angle to the stop-plate	Pre-setting dimensions
Pump $\alpha = 25 \pm 4^{\circ}$ $\beta = 33 \pm 8^{\circ}$ $Y = 30 - 8^{\circ}$ $\delta = 60 + 8^{\circ}$	Pump Dimension IV = 3,0 mm Dimension V = 24,6 mm

WPP 001/4 FIA 2.3 a 4

1. Edition

VA 4/110 H 1100 CL 136-1 0 460 314 017

supersedes

company

engine

Fiat 845-010

Nozzle-and-holder assembly 1 688 901 020 (172 + 3 bar)

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

Test Intructions and Test Equipment

VDT-WPP 161/4 B

Pre-stroke setting 0,5 mm \pm 0,02(\pm 0,04) Plunger lift of 1,0 mm related to outlet "A"

Pre-setting see reverse side

1. Settings	rev/min	Settings		Charge-air press kp/cm ²	Difference in delivery cm ³
1 1 Timing device travel	800	3,7-4,5	mm		
1 2 Supply pump pressure	800	5,3-5,8	kp/cm²		
1.3 Full-load delivery without	800	59,0-60,0	cm ³ /1000 strokes		2,5
charge-air pressure Full-load delivery with charge-air			cm ³ /1000 strokes		
pressure 1 4 Idle speed regulation	300	17,0-23,0	cm ³ /1000 strokes	 	3,0
1.5 Start	100	mind.130,0	cm ³ /1000 strokes		
1 6 Full-load speed regulation	1160	31,0-39,0	cm ³ /1000 strokes	,	

2.1 Timing device	ecificatio rev/min	ns Checking value: 220-370(190-	400)	800	970-1100)
	mm	Start		(3,4-4,8)	5,2-5,9(4,9-6,2)
2.2 Supply pump	rev/min	200		800	
	kp/cm ²	1,6-2,1(1,4-	2,3)	(5,1-6,0)	
Overflow delivery	rev/min	500			1100
Overnow delivery	cm ³ /10 s	55-100(40-11	0)		55-100(40-110)
23 Fuel deliveries					
Speed control lever	Delivery lever	rev/min	cm ³ /1000 strokes		Charge-air pressure kp/cm ²
End stop	Full	1210-1260 (1190-1280) 1160 1080 800 400		(30,0-40,0) (55,5-60,5) (58,5-60,5) (53,5-57,5)	
	Stop	1100	0		
Idle stop	Full	390-410 (370-430) 300	0	(16,0-24,0)	
End stop	Start	100 110-230	mind.130,0		

Angle to the stop-plate	Pre-setting dimensions	
Pump $\alpha = 25 \pm 4^{\circ}$ $\beta = 35 \pm 8^{\circ}$ $\gamma = 30 - 8^{\circ}$ $\delta = 60 + 8^{\circ}$	Pump Dimension IV = 2,5 mm Dimension V = 24,6 mm	

WPP 001/4 IHC 5,3 c 2

1. Edition

VA 4/100 H 1150 CR 46

0 460 304 200 Setting of the pointer at a stroke of 1 mm in supersedes IHC company

relation to outlet "A".

All test specifications are valid for **Bosch Fuel Injection Pump Test Benches**

D 206

and Testers

Test Intructions and Test Equipment

VDT-WPP 161/4 B

engine

Pre-stroke setting-

0,5 _{mm} $\pm 0,04$

Testoil-ISO 4113

				re-setting see reverse side	
1. Settings	rev/min	Settings		Charge-air press kp/cm ²	Difference in delivery cm ³
1.1 Timing device travel	800	3,1-4,1	mm		
1 2 Supply pump pressure	800	5,3-5,8	kp/cm ²		
1.3 Full-load delivery without	800	60,0-61,0	cm ³ /1000 strokes		2,5
charge air pressure Full-load delivery with charge air			cm ³ /1000 strokes		
pressure 1 4 Idle speed regulation	360	12,0-18,0	cm ³ /1000 strokes	•	3,0
15 Start 196 bar	100	mind.85,0	cm ³ /1000 strokes		
1 6 Full-load speed regulation	1220	26,0-34,0	cm ³ /1000 strokes		

2. Test Sp	rev/min	250-400(220-	•	500 80	
	mm	Start	1,0-2,0	0(0,7-2,3)(2,	,8-4,4)4,7-5,4(4,4-5,7
2.2 Supply ours	rev/min	200		80	1150
22 Supply pump	kp/cm²	2,1-2,6(1,9-	2,8)	(5,1-	-6,0) 6,7-7,3(6,5-7,5)
			į	500	1150
Overflow delivery	rev/min cm ³ /10 s		55-100	(40-110)	55-100(40-110)
23 Fuel deliveries					
Speed control lever	Delivery lever	rev/min	cm ³ /1000 strokes		Charge-air pressure kp/cm ³
End stop	Full	1260-1310 (1240-1330) 1220 1150-1180 1100 800 500	0 Start 61,5-64,5 50,0-53,0	(25,0-35,0) (60,5-65,5) (59,5-61,5) (49,0-54,0)	
	Stop	1150	0		
Idle stop	Full	480-500 (460-520) 360	0	(11,0-19,0)	
	Start	100	mind.85.0		

End stop

Angle to the stop-plate	Pre-setting dimensions		
Pump a = 25 ± 4° b = 36 ± 8° v = 30 - 8° b = 60 ± 8°	Pump Dimension IV = 3,0 mm Dimension V = 24,6 mm		

WPP 001/4 IHC 5,1 c 2

En 2. Edition

VA 6/100 H 1100 CR 21-6

11.75 supersedes IHC company

D 310 engine

Nozzle-and-holder assembly 1 688 901 020 (172 + 3 bar)

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers Test Intructions and Test Equipment

Pre-stroke setting Plunger lift of 1,0 mm related to outlet "A"

VDT-WPP 161/4 B Pre-setting see reverse side

1. Settings	rev/min	Settings		Charge-air press kp/cm ²	Difference in delivery cm ³
1.1 Timing device travel	800	3,0-4,0	mm		
12 Supply pump pressure	800	4,8-5,3	kp/c m²		
13 Full-load delivery without charge-air pressure	800	65,5-66,5	cm ³ /1000 strokes		2,5
Full-load delivery with charge-air pressure 1.4 Idle speed regulation	400	12,0-18,0	cm ³ /1000 strokes		3,0
1 5 Start	100	mind.90,0	cm ³ /1000 strokes		
1.6 Full-load speed regulation	1170	32,0-38,0	cm ³ /1000 strokes		

2.1 Timing device	ecificati rev/min	400-520(370-55	0) 600	800	950-1060
·	mm	Start 1	,0-2,0(0,7-2,3)	(2,7-4,3)	5,2-5,9(4,9-6,2)
22 Supply pump rev/min kp/cm ²	rev/min	200		800	1100
	1	1,7-2,2(1,5-2,	1)	(4,6-5,5)	5,8-6,3(5,6-6,5)
	rev/min	500			1100
Overflow delivery	cm ³ /10 s	55-100(40-110)			55-100(40-110)

23	Fuel	deliveries
20	1 961	CELLA CLICS

Speed control lever	Delivery lever	rev/min	cm ³ /1000 strokes		Charge-air pressure kp/cm ²
End stop	Full	1200-1250 (1180-1270) 1170 1130-1150 1100 800 500	0 Start 59,5-62,5 57,5-60,5	(31,0-39,0) (58,5-63,5) (65,0-67,0) (56,5-61,5)	
	Stop	1100	0		
Idle stop	Full	520-580 (500-600) 400	0	(11,0-19,0)	
End stop	Start	100 220-320	mind.90,0		

Angle to the stop-plate	Pre-setting dimensions	
Pump $\alpha = 25 \pm 4^{\circ}$ $\beta = 40 \pm 8^{\circ}$ $Y = 30 - 8^{\circ}$ $\delta = 60 \pm 8^{\circ}$	Pump Dimension IV = 4,4 mm Dimension V = 26,0 mm	

WPP 001/4 IHC 4,4 e

2. Edition

En

VA 4/11 H 1150 CR 412 0 460 314 043 supersedes

3.81

company

IHC

engine

D 268/620 W

Nozzle-and-holder assembly 1 688 901 020 (172 + 3 bar)

All test specifications are valid for Bosch Fuel Injection Pump Test Benches

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Test Intructions and Test Equipment

VDT-WPP 161/4 B

Pre-setting see reverse side

. Pre-stroke setting (المجانة)

Plunger lift of 1,0 mm related to outlet "A"

Difference in delivery Charge-air press rev/min 1. Settings kp/cm 5,2-6,0 900 1.1 Timing device travel 5,4-5,9 900 kp/cm² 12 Supply pump pressure 2,5 78,5-79,5 800 cm3/1000 strokes 13 Full-load delivery without charge-air pressure cm3/1000 strokes Full-load delivery with charge-air 3,0 12,0-18,0 350 cm³/1000 strokes 1.4 Idle speed regulation mind.130,0 100 cm³/1000 strokes 1:5 Start 36,0-44,0 1200 cm3/1000 strokes 1.6 Full-load speed regulation

2. Test Spe		NS Checking value:	600	900	1150
2.1 Timing device	rev/min mm	Start 1,8		(4,9-6,3)	6,1-6,8(5,8-7,1)
			200	900	1150
2.2 Supply pump	rev/min kp/cm ³	1.6		(5,2-6.1)	6,3-6,8(6,1-7,0)
	NOTO III		500		1150
Overflow delivery	rev/min cm ³ /10 s	55-	-100(40-110)		55-100(40-110)
23 Fuel deliveries					
Speed control lever	Delivery lever	rev/min	cm ³ /1000 strokes		Charge-air pressure kp/cm ²
End stop	Full	1220-1270 (1200-1290) 1200 1100 800 500	0 80,5-83,5 75,5-79,5	(35,0-45,0) (79,5-84,5) (78,0-80,0) (74,5-80,5)	
	Stop	1150	0		
Idle stop	Full	420-480 (400-500) 350	0	(11,0-19,0)	
•	Start	100	mind.130,0		
End stop		260-360			

Angle to the stop-plate	Pre-setting dimensions
Pump $\alpha = 25 \pm 4^{\circ}$ $\beta = 40 \pm 8^{\circ}$ $\gamma = 30 - 8^{\circ}$ $\delta = 60 + 8^{\circ}$	Pump Dimension IV = 4,0 mm Dimension V = 24,65mm

WPP 001/4 IHC 5,8 q 3

1. Edition

En

VA 6/11 H 1200 CR 407 CR 407 P 0 460 316 039

Nozzle-and-holder assembly 1 688 901 020 (172 + 3 bar) supersedes

company

IHC

DT 358/130 HP engine

All test specifications are valid for Bosch Fuel Injection Pump Test Benches Test Intructions and Test Equipment

VDT-WPP 161/4 B

Pre-setting see reverse side

0,5 mm Pre-stroke setting Plunger lift of 1,0 mm related to outlet "A"

1. Settings	rev/min	Settings		Charge-air press kp/cm²	Difference in delivery cm ³
1 1 Timing device travel	800	4,1-5,1	mm		
1.2 Supply pump pressure	800	5,0-5,5	kp/c m²		
1.3 Full-load delivery without	800	90,5-91,5	cm ³ /1000 strokes	1	2,5
charge-air pressure Full-load delivery with charge-air			cm ³ /1000 strokes		
pressure 1 4 Idle speed regulation	350	12,0-18,0	cm ³ /1000 strokes		3,0
1 5 Start	100	mind.90,0	cm ³ /1000 strokes		
1.6 Full-load speed regulation	1260	41,0-49,0	cm ³ /1000 strokes		

		1S Checking values 5	in brackets 00	800	1200
2 1 Timing device	rev/min mm	1	1,7(0,4-2,0)	(3,8-5,4) 800	7,0-7,7(6,7-8,0) 1200
2 2 Supply pump	rev/min kp/cm ³	200 1,5-2,1(1,3- 500	2,3)		6,7-7,2(6,5-7,4) 1200
Overflow delivery	rev/min cm ³ /10 s	55-100(40-11	0)		55-100(40-110)
23 Fuel deliveries Speed control lever	Delivery lever	rev/min	cm ³ /1000 strokes		Charge air pressure kp/cm
End stop	Full	1320-1370 (1300-1390) 1260 1180 800 500	0 86,5-89,5 86,0-89,0	(90,0-92,0))
	Stop	1200	0		
idie stop	Full	480-530 (460-550) 350	0	(11,0-19,0	0)
End stop	Start	100 260-360	mind.90,0	•	·

Angle to the stop-plate	Pre-setting dimensions
Pump $\alpha = 25 \pm 4^{\circ}$ $\beta = 40 \pm 8^{\circ}$ $\gamma = 30 - 8^{\circ}$ $\delta = 60 + 8^{\circ}$	Pump Dimension IV Dimension V = 24,65mm

WPP 001/4 IHC 5,8 q 4

1. Edition

VA 6/10 H 1200 CR 408 CR 408 P

IHC

company engine

D 358

Nozzle-and-holder assembly 1 688 901 020 (172 + 3 bar)

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers Test Intructions and Test Equipment

VDT-WPP 161/4 B

Pre-setting see reverse side

Pre-stroke setting 0,3 mm Plunger lift of 1,0 mm related to outlet "A"

1. Settings	rev/min	Settings		Charge-air press kp/cm ²	Difference in delivery cm ³
1.1 Timing device travel	1000	4,1-4,9	mm		
1.2 Supply pump pressure	1000	5,7-6,2	kp/cm²		
1.3 Full-load delivery without	800	73,5-74,5	cm ³ /1000 strokes		2,5
charge-air pressure Full-load delivery with charge-air			cm ³ /1000 strokes		
pressure 1.4 Idle speed regulation	350	12,0-18,0	cm ³ /1000 strokes	1	3,0
1.5 Start	100	mind.90,0	cm ³ /1000 strokes		
1 6 Full-load speed regulation	1280	28,0-36,0	cm ³ /1000 strakes		

2. Test Spe	rev/min	NS Checking value:	600	1000	1200
	rev/min mm	Start 1.3			5,2-5,9(4,9-6,2)
2 2 Supply pump	rev/min	200		1000	1200 6,4-6,9(6,2-7,1)
Overflow delivery	kp/cm ² rev/min cm ³ /10 s	1,7-2,2(1,4- 500 55-100(40-11		(5,5-0,4)	1200 55-100(40-110)
23 Fuel deliveries					
Speed control lever	Delivery lever	rev/min	cm ³ /1000 strokes		Charge-air pressure kp/cm²
End stop	Full	1320-1380 (1300-1400) 1280 1150 800 500	0 76,0-79,0 68,5-71,5	(27,0-37,0) (75,0-80,0) (73,0-75,0) (67,5-72,5)	
	Stop	1200	0		
Idle stop	Full	500-550 (480-570) 350	0	(11,0-19,0)	
End stop	Start	100 260-360	mind.90,0		

Angle to the stop-plate	Pre-setting dimensions
Pump $\alpha = 25 \pm 4^{\circ}$ $\beta = 52 \pm 8^{\circ}$ $V = 30 - 8^{\circ}$ $\delta = 60 + 8^{\circ}$	Pump Dimension IV = - mm Dimension V = 24,65 mm

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WPP 001/4 STE 2,6 a 2. Edition

En

VA 3(10 H 1200 CR 411 0 460 303 158

2. Test Specifications

supersedes 5.80 Steyr engine WO 311.40

Nozzle-and-holder assembly 1 688 901 020 (172 + 3 bar)

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers Test Intructions and Test Equipment

VDT-WPP 161/4 B

Pre-setting see reverse side

Pre-stroke setting

 $0,5 \quad mm^{\pm} \quad 0,02 \quad (\pm \quad 0,04)$

Festoil-ISO 4113

1. Settings	rev/min	Settings		Charge-air press kp/cm	Difference in delivery cm ³
1 1 Timing device travel	1000	5,6-6,6	mm		
1 2 Supply pump pressure	1000	5,2~5,7	kp/cm²		
1 3 Full-load delivery without	1150	65,5-66,5	cm ³ /1000 strokes		2,5
charge-air pressure Full-load delivery with charge-air			cm ³ /1000 strokes		
pressure 1 4 Idle speed regulation	300	12,0-18,0	cm ³ /1000 strokes		3,0
1 5 Start	100	mind.70,0	cm ³ /1000 strokes		
1 6 Full-load speed regulation	1300	36,0-44,0	cm ³ /1000 strokes		

Checking values in brackets

21 Timing device	rev/min		70	0	1000
	mm	Start	2,7-3,7(2	,4-4,0)	(5,3-6,9)
2 2 Supply pump	rev/min	200		. 1000	1200
	kp/cm ²	1,4-1,9(1,	2-2,1)	(5,0-5,9)	5,9-6,4(5,7-6,6)
Overflow delivery	rev/min	500			1200
	cm ³ /10 s	55-100(40-	110)		55-100(40-110)
23 Fuel deliveries					
Speed control lever	Delivery lever	rev/min	cm ³ /1000 strokes		Charge-air pressure kp/cm/
End stop	Full	1360-1410 (1340-1430) 1300 1150 1000 500	68,5-70,5	(35,0-45,0) (65,0-67,0) (67,5-71,5) (53,5-58,5)	
idle stop	Full	380-430 (360-450) 300	0	(11,0-19,0)	
•	Start	100	mind.70,0		
End stop	1	120-220			

Angle to the stop-plate	Pre-setting dimensions
Pump $\alpha = 25 \pm 4^{\circ}$ $\beta = 44 \pm 8^{\circ}$ $\gamma = 30 - 8^{\circ}$ $\delta = 60 + 8^{\circ}$	Pump Dimension IV = 4,00 mm Dimension V = 24,65 mm

WPP 001/4 IHC 5,1 1

3. Edition

VA 6/100 H 1200 CR 51 0 460 306 204 Setting of the pointer at a stroke of 1 mm in relation to outlet "A".

12.77 IHC company D 310 engine

Nozzle-and-holder assembly 1 688 901 020 (172 + 3 bar)

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers Test Intructions and Test Equipment

VDT-WPP 161/4 B

Pre-stroke setting.

 $0,3_{mm} \pm 0,04$

2. Test Specifications Checking values in brackets

	Pr	Pre-setting see reverse side			
1. Settings	rev/min	Settings		Charge-air press	Difference in delivery cm ³
1.1 Timing device travel	1000	2,5-3,5	mm		
1 2 Supply pump pressure	1000	5,4-5,9	kp/cm²		
1 3 Full-load delivery without	800	60,0-61,0	cm ³ /1000 strokes		2,5
charge-air pressure Full-load delivery with charge-air			cm ³ /1000 strokes		
pressure 1 4 Idle speed regulation	300	12,0-18,0	cm ³ /1000 strokes		3,0
1 5 Start	100	mind.80,0	cm ³ /1000 strokes		
1 6 Full-load speed regulation	1250	33,0-41,0	cm ³ /1000 strokes		

2. rest spe	rev/min	450-600(430-		700 1	000	1050-1200
2.1 Timing device	mm	Start			2,2-3,8)	3,4-4,1(3,1-4,4)
22 Supply pump	rev/min kp/cm ²	200)	1	00	1200 6,2-6,7(6,0-6,9)
Overflow delivery	rev/min cm ³ /10 s	500 55-100(40-11)	•		1200 55-100(40-110)
23 Fuel deliveries	<u> </u>					
Speed control lever	Delivery lever	rev/min	cm ³ /1000 strokes		Charg	e air pressure kp/cm²
End stop	Full	1310-1360 (1290-1380) 1250 1200-1220 1150 800 500	0 Start 61,0-64,0 52,0-55,0	(32,0-42 (60,0-69 (59,5-6) (51,0-56	5,0) 1,5)	
	Stop	1200	0			
		1	 			

Idle stop

End stop

Full

Start

(11,0-19,0)

360-410

(340-430)

300 220-320

Angle to the stop-plate	Pre-setting dimensions
Pump $\alpha = 25 \pm 4^{\circ}$ $\beta = 40 \pm 8^{\circ}$ $Y = 30 - 8^{\circ}$ $\delta = 60 \pm 8^{\circ}$	Pump Dimension IV = 3,6 mm Dimension V = 24,6 mm

WPP 001/4 IHC 5,1 d 1

3. Edition

VA 6/10 H 1200 CR 44-1 0 460 306 186

Nozzle-and-holder assembly 1 688 901 020 (172 + 3 bar)

12.79 supersedes IHC company D 310 engine

Setting of the pointer at a stroke of 1 mm in

relation to outlet "A".

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers Test Intructions and Test Equipment

VDT-WPP 161/4 B

Pre-stroke setting

 $0.3 \, \text{mm} \pm 0.02 \, (\pm 0.04)$

Pre-setting see reverse side

rev/min	Settings		kp/cm ²	Difference in delivery
800	4,6-5,6	mm .		
800	5,1-5,6	kp/cm²		
800	62,5-63,5	cm ³ /1000 strokes		2,5
		cm ³ /1000 strokes		
450	13,0-19,0	cm ³ /1000 strokes		3,0
100	mind.75,0	cm ³ /1000 strokes	,	
1270	21,0-29,0	cm ³ /1000 strokes		
	800 800 800 450 100	800 4,6-5,6 800 5,1-5,6 800 62,5-63,5 13,0-19,0 100 mind.75,0	## 800 ## 4,6-5,6 mm 800 ## 5,1-5,6 kp/cm² 800 ## 62,5-63,5 cm³/1000 strokes cm³/1000 strokes 13,0-19,0 cm³/1000 strokes mind.75,0 cm³/1000 strokes	800 4,6-5,6 mm 800 5,1-5,6 kp/cm² 800 62,5-63,5 cm³/1000 strokes cm³/1000 strokes 450 13,0-19,0 cm³/1000 strokes 100 mind.75,0 cm³/1000 strokes

2. Test Sp	rev/min	ONS Checking values in 130-280 (100-3)		800	1000-1150
2 : Timing device	mm			(4,3-5,9)	6,1-6,8(5,8-7,1)
		200		800	1200
22 Supply pump rev/min kp/cm²	2,5-3,0(2,3-3	,2)	(4,9-5,8)	6,1-6,6(5,9-6,8)	
		500			1200
Overflow delivery rev/min cm³/10 s	55-100(40-110)		55-100(40-110)	

Over11011 do	cm ³ /10 s	55-100(40-11	10)		55-100(40-110)
2 3 Fuel deliveries Speed control lever	Delivery lever	rev/min	cm ³ /1000 strokes		Charge air pressure kp/cm ³
End stop	Full	1280-1320	0		
end and		(1260-1340) 1270		(20,0-30,0)	
		1220-1250	Start	(62 5-67 5)	
		1150 800	63,5-66,5	(62,5-67,5) (62,0-64,0) (55,5-60,5)	
		500	56,5-59,5	(55,5-60,5)	
		1200	0		
	Stop				
Idle stop	Full	530-590	0		
		(520-610) 450		(12,0-20,0)	
	Start	100	mind.75,0		
í	1		I .		1

End stop

220-320

Angle to the stop-plate	Pre-setting dimensions
Pump $a = 25 \pm 4^{\circ}$ $\beta = 50 \pm 8^{\circ}$ $Y = 30 - 8^{\circ}$ $\delta = 60 \pm 8^{\circ}$	Pump Dimension IV = 2,40 mm Dimension V = 24,65 mm

WPP 001/4 IHC 5,1 f 1

2. Edition

VA 6/100 H 1350 CR 49-1 0 460 306 189

relation to outlet "A".

. Nozzle-and-holder assembly 1 688 901 020 (172 + 3 bar) Setting of the pointer at a stroke of 1 mm in

3.76 IHC D 310

company engine

supersedes

Pre-stroke setting

0,5_{mm} ± 0,04

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers Test Intructions and Test Equipment

VDT-WPP 161/4 B

Pre-setting see reverse side

1.	Settings	rev/min	Settings		Charge-air press kp/cm ²	Difference in delivery cm ³
11	Timing device travel *	700	4,1-5,1	mm .		
12	Supply pump pressure	700	5,3-5,8	kp/cm ²		
13	Full-load delivery without charge-air pressure	800	62,0-63,0	cm ³ /1000 strokes		2,5
	Full-load delivery with charge-air pressure			cm ³ /1000 strokes		
14	Idle speed regulation	550	9,0-15,0	cm ³ /1000 strokes		3,0
15	Start 196 bar	100	mind.70,0	cm ³ /1000 strokes		
1.6	Full-load speed regulation	1440	31,0-39,0	cm ³ /1000 strokes		

2. Test Sp	ecification	ng Chacking value	s in hrackets		
_	rev/min	ns Checking value: 150-300(120-	-330) 3	50 700	0 1100-1250
2.1 Inning device	mm	Start		(1,0-2,6)(3.8	-5,4)7,0-7,7(6,7-8,0)
		200		70	
2 2 Supply pump	rev/min kp/cm²	2,9-3,4(2,7	-3,6)	• •	-6,0)7,2-7,7(7,0-7,9)
		500			1350
Overflow delivery	rev/min cm ³ /10 s	55-100(40-1	10)		55-100(40-110)
2.3 Fuel deliveries					
Speed control lever	Delivery lever	rev/min	cm ³ /1000 strokes		Charge-air pressure kp/cm ²
End stap	Full	1510-1560 (1490-1580) 1440 1360-1390 1300 800 500	Start 63,0-66,0 55,5-58,5	(61,5-63,5)	
	Stop	1350	0		
Idle stop	Full	600-670 (580-690) 550	0	(8,0-16,0)	
•	Start	100	mind.70,0		
End stop		220-320			

BOSCH

Angle to the stop-plate	Pre-setting dimensions
Pump α = 25 ± 4° β = 45 ± 8° γ = 30 - 8° δ = 60 ± 8°	Pump Dimension IV = 2,60 mm Dimension V = 24,65 mm

WPP 001/4 IHC 2,4 d

2. Edition

Nozzle-and-holder assembly 1 688 901 020 (172 + 3 bar) VA 3/100 H 1025 CR 43-2

Setting of the pointer at a stroke of 1 mm in relation to outlet "A".

3.77 supersedes IHC company D 155

All test specifications are valid for Bosch Fuel Injection Pump Test Benches

Test In uctions and Test Equipment

VDT-WPP 161/4 B

engine

Pre-stroke setting

 $0.3 \text{ mm} \pm 0.04$

Pre-setting see reverse side

1.	Settings	revimin	Settings		Charge-air press kp/cm ²	Difference in delivery cm ³
11	Timing device travel	500	2,8-3,6	mm .		
12	Supply pump pressure	800	5,4-5,9	kp/cm ²		
13	Full-load delivery without charge-air pressure	800	58,5-59,5	cm ³ /1000 strokes		2,5
	Full-load delivery with charge-air pressure			cm ³ /1000 strokes	İ	
14	Idle speed regulation	400	7,0-13,0	cm ³ /1000 strokes		3,0
15	Start	100	mind.90,0	cm ³ /1000 strokes		
16	Full-load speed regulation	1070	26,0-34,0	cm ³ /1000 strokes		

2. Test Sp	ecificatio	ns Checking value				
2.1 Timing device	ten/wru	120-250(90-2	(88)	300 5	00	800-950
	mm	Start	0,8-1,8(0	,5-2,1) (2,5-	3,9) 4,7	-5,4(4,4-5,7)
2.2 Supply pump	rev/min	200		800		1025
	kp/cm²	2,3-2,8(2,1-	3,0)	5,4-5,9(5,2-	6,1) 6,2	-6,7(6,0-6,9)
Overflow delivery	rev/min	500				1025
OTC. NOW GOINGLY	cm ³ /10 s	55-100(40-11	0)		55-1	00(40-110)
23 Fuel deliveries						
Speed control lever	Delivery lever	rev/min	cm ³ /1000 strokes		Charge-air	pressure kp/cm ²
End stop	Full	1100-1150	0			
		(1080-1170)		(25,0-35,0	\	
	1	1070 1020-1040	Start	(25,0-55,0		
		1000	57,0-60,0	(56,0-61,0)	
		800		(58,0-60,0)	
		500	51,5-54,5	(50,5-55,5	5)	
		1005				
	Stop	1025	0			
Idle stop	Full	430-480	0			
		(410-500) 400		(6,0-14,0)		
	0	100	mind.90,0			
End stop	Start	220-320				•
	1	1	ı		1	

Testoil-ISO 4113

Angle to the stop-plate	Pre-setting dimensions
Pump $\alpha = 25 \pm 4^{\circ}$ $\beta = 40 \pm 8^{\circ}$ $\gamma = 30 - 8^{\circ}$ $\delta = 60 \pm 3^{\circ}$	Pump Dimension IV Dimension V = 24,6 mm

WPP 001/4 IHC 5,8 m 1 2. Edition

VA 6/10 H 1100 CR 87-2 0 460 306 248

10.79 supersedes IHC company D 358 engine

Nozzle-and-holder assembly

All test specifications are valid for Bosch Fuel Injection Pump Test Benches

1 688 901 020 (172 + 3 bar)

Test Intructions and Test Equipment **VDT-WPP 161/4 B**

Pre-setting see reverse side

Pre-stroke setting Plunger lift of 1,0 mm related to outlet "A"

	Settings		Charge-air press	Difference in delivery
	i		kp/cm ²	cm³
0	3,8-4,6	mm		
0	4,8-5,3	kp/cm ²		
0	67,5-68,5	cm ³ /1000 strokes		2,5
		cm ³ /1000 strokes		
10	9,5-15,5	cm ³ /1000 strokes		3,0
0	mind.80,0	cm ³ /1000 strokes		
i0	33,5-41,5	cm ³ /1000 strokes		
)	00 00 00 00 00	4,8-5,3 67,5-68,5 9,5-15,5 mind.80,0	4,8-5,3 kp/cm² 67,5-68,5 cm³/1000 strokes cm³/1000 strokes 9,5-15,5 cm³/1000 strokes mind.80,0 cm³/1000 strokes	3,8-4,6 mm 4,8-5,3 kp/cm² 67,5-68,5 cm³/1000 strokes cm³/1000 strokes 9,5-15,5 cm³/1000 strokes mind.80,0 cm³/1000 strokes

2 Tool Sad	oificatio	ne			
2. Test Spe		NS Checking value 400	s in brackets	700	800-950
	rev/min		0.41		
	mm	0,8-1,8(0,5-	2,1)	(3,5-4,9)	5,2-5,9(4,9-6,2)
2 2 Supply pump	rev/min	200		700	1100
	kp/cm ²	2,2-2,7(2,0-	-2,9)	(4,6-5,5)	6,2-6,7(6,0-6,9)
İ		500			1100
Overflow delivery	rev/min cm ³ /10 s	55-100(40-11	10)		55-100(40-110)
23 Fuel deliveries					
Speed control lever	Delivery lever	rev/min	cm ³ /1000 strake	s	Charge-air pressure kp/cm²
End stop	Full	1190-1240 (1170-1260) 1150 1050 800 500	0 68,0-71,0 66,0-70,0	(32,5-42,5) (67,0-72,0) (67,0-69,0) (65,0-71,0)	
	Stop	1100	0		
Idle stop	Full	480-530 (460-550) 400	0	(8,5-16,5)	
	Start	100	mind.80,0)	
End stop		220-320		•	

BOSCH

Angle to the stop plate	Pre-setting dimensions	·
Pump $\alpha = 25 \pm 4^{\circ}$ $\beta = 40 \pm 3^{\circ}$ $\gamma = 30 - 8^{\circ}$ $\delta = 60 \pm 8^{\circ}$	Pump Dimension IV = 3,00 mm Dimension V = 24,65 mm	

En

WPP 001/4 IHC 4,4 d 2. Edition

En

VA 4/11 H 1200 CR 93-1 0 460 314 041 supersedes 6.79
IHC
D 268
engine

Nozzle-and-holder assembly 1 688 901 020 (172 + 3 bar)

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers Test Intructions and Test Equipment

VDT-WPP 161/4 B

Pre-setting see reverse side

Pre-stroke setting 0,5 mm \pm 0,02 (\pm 0,04) Plunger lift of 1,0 mm related to outlet "A"

1.	Settings	rev/min	Settings	Charge-air press kp/cm ²	Difference in delivery cm ³
11	Timing device travel	700	4,8-5,8 mm	<u> </u>	
12	Supply pump pressure	700	4,6-5,1 kp/cm²		
1.3	Full-load delivery without charge-air pressure	800	77,5-78,5 cm ³ /1000 stroke		2,5
	Full-load delivery with charge-air pressure		cm ³ /1000 stroke	\$	
1.4	idle speed regulation	400	11,0-17,0 cm ³ /1000 stroke	s	3,0
15	Start 196 bar	100	mind.95,0 cm ³ /1000 stroke	s	
16	Full-load speed regulation	1280	34,0-42,0 cm ³ /1000 strake	•	

2. Test Sp	rev/min	400		700	770-920
	mm	1,2-2,2(0,9	-2,5)	(4,5-6,1)	6,1-6,8(5,8-7,1)
2.2 Supply pump	rev/min	200		700	1200
	kp/cm ²	1,7-2,2(1,5	-2,4)	(4,4-5,3)	6,6-7,1(6,4-7,3)
Overflow delivery	rev/min	500			1200
	cm ³ /10 s	55-100(40-1	10)		55-100(40-110)
23 Fuel deliveries					
Speed control lever	Delivery lever	rev/min	cm ³ /1000 strakes	5	Charge-air pressure kp/cm ²
End stop	Full	1330-1380 (1310-1400 1280 1150 800 500	0 80,0-83,0 74,0-77,0	(33,0-43,0) (79,0-84,0) (77,0-79,0) (73,0-78,0)	
	Stop	·			
Idle stop	Full	460-530 (440-550) 400	0	(10,0-18,0)	
End stop	Start	100 220-340	mind.95,0		

Testoil-ISO 4113

BOSCH

Angle to the stop-plate	Pre-setting dimensions		
Pump $\alpha = 25 \pm 4^{\circ}$ $\beta = 36 \pm 8^{\circ}$ $\gamma = 30 - 8^{\circ}$ $\delta = 60 \pm 8^{\circ}$	Pump Dimension IV = 1,60 mm Dimension V = 24,65 mm		

WPP 001/4 IHC 5,1 k

2. Edition

En

VA 6/100 H 1150 CR 79-1 0 460 306 222

2 Test Specifications

supersedes

3.77

company engine IHC D 310-X 55

Nozzle-and-holder assembly 1 688 901 020 (172 + 3 bar)

All test specifications are valid for Bosch Fuel Injection Pump Test Benches

and Testers
Test Intructions and Test Equipment

VDT-WPP 161/4 B

Pre-setting see reverse side

Pre-stroke setting 0,4 mm \pm 0,04 Plunger lift of 1,0 mm related to outlet "A"

1.	Settings	rev/min	Settings		Charge-air press kp/cm ⁻¹	Difference in delivery cm ³
11	Timing device travel	1000	3,9-4,9	mm		
12	Supply pump pressure	1000	5,8-6,3	kp/cm²		
13	Full-load delivery without charge-air pressure	1000	66,0-67,0	cm ³ /1000 strokes		2,5
	Full-load delivery with charge-air			cm ³ /1000 strokes		
14	pressure Idle speed regulation	450	17,0-23,0	cm ³ /1000 strokes		3,0
1.5	Start	100	mind.75,0	cm ³ /1000 strokes		
16	Full-load speed regulation	1250	31,0-39,0	cm ³ /1000 strokes		

Checking values in brackets

2. Test Spe	rev/min	Checking value:	s in brackets	1000	1250
2 i ilming device	mm	1,3-2,3(1,0-	2,6)	(3,6-5,2)	5,2-5,9(4,9-6,2)
2 2 Supply pump	rev/min	200	_,_,	1000	1150
	kp/cm ²	2,0-2,5(1,8-	2,7)	(5,6-6,5)	6,3-6,8(6,1-7,0)
Overflow delivery	rev/min	500			1150
Overnow delivery	cm ³ /10 s	55-100(40-	110)		55-100(40-110)
23 Fuel deliveries					
Speed control lever	Delivery lever	rev/min	cm ³ /1000 strokes		Charge-air pressure kp/cm²
End stop	Full	1300-1350 (1280-1370) 1250	0	(30,0-40,0)	
		1120 1000 500	65,0-67,0 56,5-59,5	(65,5-67,5)	
	Stop	1150	0		
idle stop	Full	530-590 (510-610) 450	0	(16,0-24,0)	
	Start	100	mind.75,0		
End stop		220-320			

G7

Angle to the stop-plate	Pre-setting dimensions
Pump $\alpha = 25 \pm 4^{\circ}$ $\beta = 35 \pm 8^{\circ}$ $\gamma = 30 - 8^{\circ}$ $\delta = 60 \pm 8^{\circ}$	Pump = 4,0 mm Dimension IV Dimension V = 24,6 mm

2. Test Specifications Checking values in brackets

WPP 001/4 IHC 2,9 b 2

1. Edition

En

VA 3/100 H 1090 CR 11-2
Setting in accordance with WPP 161/4,1st.
Supplement plunger lift 1.0 mm
referenced to outlet "A".

Nozzle-a

Pre-stroke setting

Nozzle-and-holder assembly 1 688 901 020 (172 + 3 bar) upersedes

company

engine

IHC

D 179 tractor 553

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers Test Intructions and Test Equipment

VDT-WPP 161/4 B

Pre-setting see reverse sid

Testoil-ISO 4113

•			Pre	e-setting see revers	e side
1. Settings	rev/min	Settings		Charge-air press kp/cm ²	Difference in delivery cm ³
1.1 Timing device travel	700	3,3-4,1 mm	m		
1.2 Supply pump pressure	700	4,5-5,0 kp	/cm²		
1.3 Full-load delivery without charge-air pressure	800	66,5-67,5 cm	n ³ /1000 strokes		2,5
Full-load delivery with charge-air		cn	n ³ /1000 strokes		
pressure 1.4 idle speed regulation	400	12,0-18,0 cm	n ³ /1000 strokes		3,0
15 Start 196 bar	100	mind.90,0 cm	n ³ /1000 strokes		
1 6 Full-load speed regulation	1150	36,0-44,0 _{cn}	n ³ /1000 strokes		

2.1 Timing device	rev/min	300-450(270-	480) 500	0 700	850-1000
	mm	Start	0,8-1,8(0,	5-2,1) (3,0-4	,4) 5,2-5,9(4,9-6,2)
2 2 Supply pump	rev/min	200		700	1090
	kp/cm ²	2,0-2,5(1,8-	-2,7)	(4,3-5	,2) 6,0-6,5(5,8-6,7)
Overflow delivery	rev/min	500			1090
	cm ³ /10 s	55-100(40-11	0)		55-100(40-110)
23 Fuel deliveries					
Speed control lever	Delivery lever	rev/min	cm ³ /1000 strokes		Charge-air pressure kp/cm²
End stop	Full	1180-1250 (1160-1270) 1150	0	(35.0-45.0)	
		1050 800	73,0-76,0	(35,0-45,0) (72,0-77,0) (66,0-68,0)	
		500	63,5-66,5	(62,5-67,5)	
	Stop	1090	0		
Idle stop	Full	470-550 (450-570)	0		
		400		(11,0-19,0)	
	Start	100	mind.90,0		
End stop		220-300		•	

Angle to the stop-plate	Pre-setting dimensions	<u>-</u> -
	Pump = 4,6 mm Dimension IV = 24,6 mm	

WPP 001/4 IHC 5,8 m

2. Edition

VA 6/100 H 1100 CR 87-1 0 460 306 220

Testoil-ISO 4113

 Nozzle-and-holder assembly 1 688 901 020 (172 + 3 bar)

12.77 supersedes IHC company

engine

D 358

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers Test Intructions and Test Equipment

VDT-WPP 161/4 B

Pre-setting see reverse side

Pre-stroke setting Plunger lift of 1,0 mm related to outlet "A"

rev/min	Settings		Charge-air press kp/cm ²	Difference in delivery cm ³
700	3,9-4,7	mm ko/cm²		
700				0.5
800	68,5-69,5			2,5
		_	}	3.0
				3,0
}	1			
	700 700 800 400 100	700 3,9-4,7 700 4,8-5,3 800 68,5-69,5 400 9,5-15,5	700 3,9-4,7 mm 700 4,8-5,3 kp/cm² 800 68,5-69,5 cm³/1000 strokes cm³/1000 strokes 100 mind.80,0 cm³/1000 strokes	700 3,9-4,7 mm 700 4,8-5,3 kp/cm ² 800 68,5-69,5 cm ³ /1000 strokes cm ³ /1000 strokes 400 9,5-15,5 cm ³ /1000 strokes 100 mind.80,0 cm ³ /1000 strokes

2. Test Sp	ecificatio		s in brackets			000 050
2.1 Timing device	rev/min	400		700		800-950
	mm	0,8-1,8(0,5-	2,1) (3	3,6-5,0)	5,2-	5,9(4,9-6,2)
22 Supply pump	rev/min	200		700		1100
	kp/cm²	2,3-2,8(2,1-	3,0) (4	1,6-5,5)	6,2-	6,7(6,0-6,9)
Overflow delivery	rev/min	500				1100
	cm ³ /10 s	55-100(40-11	0)		55	5-100(40-110)
2.3 Fuel deliveries						
Speed control lever	Delivery lever	rev/min	cm ³ /1000 strokes			Charge-air pressure kp/cm ²
End stop	Full	1220-1270 (1200-1290) 1150 1080 800 500	0 71,5-73,5 65,0-68,0)	(40,0-5 (70,5-7 (68,0-7 (64,0-6	50,0) 74,5) 70,0) 59,0)	
	Stop	1100	0			
idle stop	Full	500-550 (480-570) 400	0	(8,5-16	5,5)	
	Start	100	mind.80,0			
End stop		220-320				

G11

Angle to the stop-plate	Pre-setting dimensions
Pump $\alpha = 25 \pm 4^{\circ}$ $\beta = 40 \pm 8^{\circ}$ $\gamma = 30 - 8^{\circ}$ $\delta = 60 \pm 8^{\circ}$	Pump Dimension IV 3,00 mm Dimension V 24,65 mm

WPP 001/4 GUL 4,7 b 1

1. Edition

VA 6/100 H 1000 BR 140-2 0 460 306 062

supersedes

company

Guldner

ençine

6 L 79-60 PS

Nozzle-and-holder assembly 1 688 901 020 (172 + 3 bar)

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers Test Intructions and Test Equipment

VDT-WPP 161/4 B Pre-setting see reverse side

0,1 mm Plunger lift of 1,0 mm related to outlet "A"

1. Settings	rev/min	Settings		Charge-air press kp/cm ²	Difference in delivery cm ³
1.1 Timing device travel	700	6,8-7,8	mm		
1.2 Supply pump pressure	700	4,4-4,9	kp/cm²		
1.3 Full-load delivery without	800	49,5-50,5	cm ³ /1000 strokes		2,5
charge-air pressure Full-load delivery with charge-air			cm ³ /1000 strokes		
pressure 1.4 Idle speed regulation	250	10,0-16,0	cm ³ /1000 strokes		3,0
1.5 Start	100	mind.70,0	cm ³ /1000 strokes		
1 6 Full-load speed regulation	1030	26,0-34,0	cm ³ /1000 strakes		

2. Test Sp	ecificatio	NS Checking value		***	040.000
2.1 Timing device	rev/min	220-380(190-	410)	700	840-980
	mm	Start		(6,5-8,1)	9,7-10,4(9,4-10,7)
2 2 Supply pump	rev/min	100		700	1000
z z ouppi, pomp	kp/cm [®]	1,0-1,5(0,8-	-1,7)	(4,2-5,1)	5,5-6,0(5,3-6,2)
Overflow delivery	rev/min	500			1000
Overnow delivery	cm ³ /10 s	mind. 25			55-125(40-140)
23 Fuel deliveries					
Speed control lever	Delivery lever	rev/min	cm ³ /1000 strokes		Charge-air pressure kp/cm²
End slop	Full .	1050-1090 (1020-1120) 1030 950 800 500	0 49,0-51,0 40,5-43,5	(25,0-35,0) (48,0-52,0) (49,0-51,0) (39,5-44,5)	
	Stop	1000	0		
Idle stop	Full	280-340 (260-360) 250	0	(9,0-17,0)	
	Start	100	mind.70,0		
End stop		130-230		•	

Angle to the stop-plate	Pre-setting dimensions	
Pump $a = 25 \pm 4^{\circ}$ $\beta = 44 \pm 8^{\circ}$ $Y = 30 - 8^{\circ}$ $\delta = 60 + 8^{\circ}$	Pump Dimension IV = 1,0 mm Dimension V = - mm	

WPP 001/4 GUL 4,7 b 3. Edition

VA 6/100 H 1100 BR 140 0 460 306 061

Pre-strake setting

0,1 mm

supersedes

7.71

company

Guldner

engine

6 L 79-75 PS

Nozzle-and-holder assembly 1 688 901 020 (172 + 3 bar)

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers Test Intructions and Test Equipment

VDT-WPP 161/4 B

Plunger lift of 1,0 mm related to outlet "A"

Pre-setting see reverse side

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	e-zerring see revers	e side			
1. Settings	rev/min	Settings		Charge-air press kp/cm ²	Difference in delivery cm ³
1.1 Timing device travel	700	6,1-7,1	mm		
1.2 Supply pump pressure	700	5,1-5,6	kp/cm²		
1.3 Full-load delivery without	800	54,5-55,5	cm ³ /1000 strokes		2,5
charge-air pressure Full-load delivery with charge-air		~-	cm ³ /1000 strokes		
pressure 1.4 Idle speed regulation	250	10,0-16,0	cm ³ /1000 strokes		3,0
1.5 Start	100	mind.70,0	cm ³ /1000 strokes		
1 6 Full-load speed regulation	1130	24,0-32,0	cm³/1000 strokes		

2.1 Timing device	rev/min	NS Checking value 250-400 (220)-430)	700	900-1050
	mm	Start		(5,8-7,4)	9,7-10,4(9,4-10,7)
22 Supply pump	rev/min	100	4.0	700	1100
Occasion and second	kp/cm ²	1,2-1,7(1,0-	-1,9)	(4,9-5,8)	6,5-7,0(6,3-7,2) 1000
Overflow delivery	rev/min cm ³ /10 s	mind. 25			55-125(40-140)
23 Fuel deliveries		·			
Speed control lever	Delivery lever	rev/min	cm ³ /1000 strokes		Charge-air pressure kp/cm²
End stop	Full	1150-1200 (1130-1220) 1130	0	/23 N-33 N	1)
		1050 800	54,5-57,5	(23,0-33,0 (53,5-58,5 (54,0-56,0	5)))
		500	46,0-49,0	(45,0-50,0)
		1100	0		
	Stop				
idle stop	Full	300-350	0		
		(280-370) 250		(9,0-17,0))
	Į	1	1		1

End stop

mind.70,0

100

130-230

Angle to the stop plate	Pre-setting dimensions	
Pump $\alpha = 25 \pm 4^{\circ}$ $\beta = 50 \pm 8^{\circ}$ $Y = 30 - 8^{\circ}$ $\delta = 60 + 8^{\circ}$	Pump Dimension IV = 1,0 mm Dimension V = - mm	

WPP 001/4 IHC 5,1 g

2. Edition

1100

VA 6/100 H 1200 BR 51

12.70 IHC company D 310 DU

engine

Nozzle-and-holder assembly 1 688 901 020 (172 + 3 bar)

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers Test Intructions and Test Equipment

1110-1210

VDT-WPP 161/4 B

Pre-setting see reverse side

0,3 mm Pre-stroke setting Plunger lift of 1,0 mm related to outlet "A"

2. Test Specifications

1. Settings	rev/min	Settings		Charge-air press kp/cm ²	Difference in delivery cm ³
1 1 Timing device travel	1100	5,6-6,6	mm		
1.2 Supply pump pressure	1100	6,3-6,8	kp/cm²		
1.3 Full-load delivery without	800	58,0-59,0	cm ³ /1000 strokes		2,5
charge-air pressure Full-load delivery with charge-air			cm ³ /1000 strokes		ļ
pressure 1 4 Idle speed regulation	300	12,0-18,0	cm ³ /1000 strokes		3,0
15 Start (mech.) 196 bar	100	mind.90,0	cm ³ /1000 strokes		
1.6 Full-load speed regulation	1250	41,0-49,0	cm ³ /1000 strakes		

Checking values in brackets

+560-720(530-750)

300

100

500

2.1 Timing device	rev/min	500-720(530-	7 30)	1100	1110-1210
	mm	Start	(5,3	3-6,9)	6,7-7,4(6,4-7,7)
22 Supply pump	rey/min	100)	1100	1200
22 Supply pamp	kp/cm ²	1,4-1,9(1,2-	2,1) (6,	1-7,0)	
Overflow delivery	rev/min	500)	1000	
Otomow Genvery	cm ³ /10 s	mind. 25	55-12	5(40-140)	
23 Fuel deliveries					
Speed control lever	Delivery lever	rev/min	cm ³ /1000 strokes		Charge-air pressure kp/cm²
End stop	Full	1340-1390 (1320-1410)	0	/40 0 50	0)
		1250 1150	60,0-63,0	(40,0-50, (59,0-64,	(0)
		800 500	50,5-53,5	(57,5-59, (49,5-54,	(5)
		1200	0		
	Stop	1200			
idie stop	Full	360-410 (340-430)	0		

End stop

Start

Geschäftsbereich KH. Kundendienst. Kfz-Ausrustung.

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mind. 90,0

max. 45,0

(11,0-19,0)

Angle to the stop-plate	Pre-setting dimensions	
Pump $\alpha = 25 \pm 4^{\circ}$ $\beta = 40 \pm 8^{\circ}$ $Y = 39 - 8^{\circ}$ $\delta = 60 + 8^{\circ}$	Pump Dimension IV = 2,0 mm Dimension V = - mm	,

WPP 001/4 GUL 3,1 a

3. Edition

VA 4/100 H 1150 BR 106

supersedes

company

Güldner 4 L 79

engine

Nozzle-and-holder assembly 1 688 901 020 (172 + 3 bar)

All test specifications are valid for Bosch Fuel Injection Pump Test Benches

Test Intructions and Test Equipment

VDT-WPP 161/4 B

Pre-setting see reverse side

0,1 mm Pre-stroke setting Plunger lift of 1,0 mm related to outlet "A"

1.	Settings	rev/min	Settings	Charge air press kp/cm	Difference in delivery cm ³
1.1	Timing device travel	700	4,5-5,5 mm		
12	Supply pump pressure	1150	5,6-6,1 kp/cm²		
13	Full-load delivery without	800	54,0-55,0 cm ³ /1000 strokes		2,5
	charge-air pressure Full-load delivery with charge-air		cm ³ /1000 strokes		
14	pressure tdle speed regulation	250	11,0-17,0 cm ³ /1000 strokes		3,0
15	Start	100	mind.100,0 cm ³ /1000 strokes		
16	Full-load speed regulation	1190	16,0-24,0 cm ³ /1000 strokes		

2. Test Sp 2.1 Timing device	rev/min	ns Checking value 350-510 (320	1-540)	700	990-1150
E. I THIRING GEALCE	mm	Start	,	, , ,	10,7-11,4(10,4-11,7
22 Supply pump	rev/min	10	· -	200	1150
	kp/cm ²	0,9-1,4(0,7-	1,6)	3,9-4,4(3,7-4,	6) (5,4-6,3)
Overflow delivery	rev/min				1000
,	cm ³ /10 s				55-125(40-140)
23 Fuel deliveries					
Speed control lever	Delivery lever	rev/min	cm ³ /1000 strokes		Charge-air pressure kp/cm²
End stop	Full	1170-1220 (1150-1240) 1190 1130 - 800 500	0 56,5-59,5 44,5-47,5	(15,0-25,0) (55,5-60,5) (53,5-55,5) (43,5-48,5)	
	Stop	1150	0		
Idle stop	Full	280-330 (260-350) 250	0	(10,0-18,0)	
End stop	Start	100 130-230	mind.100,0		·

Angle to the stop-plate	Pre-setting dimensions
Pump $\alpha = 25 \pm 4^{\circ}$ $\beta = 40 \pm 8^{\circ}$ $\gamma = 30 - 8^{\circ}$ $\delta = 60 + 8^{\circ}$	Pump Dimension IV = - mm Dimension V = - mm Dimension I = 7,0 mm Dimension II = 11,0 mm Dimension III = 32,8 mm

WPP 001/4 STE 2,0 a 2

1. Edition

VA 2/100 H 1100 BR 156 0 460 302 005

Steyr

company engine

WD 210.40

Nozzle-and-holder assembly 1 688 901 020 (172 + 3 bar)

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

Test Intructions and Test Equipment

VDT-WPP 161/4 B

Pre-setting see reverse side

Pre-stroke setting

0,3 mm

Plunger lift of 1,0 mm related to outlet "A"

1.	Settings	rev/min	Settings		Charge-air press kp/cm²	Difference in delivery cm ³
11	Timing device travel	700	3,8-4,8	mm		
12	Supply pump pressure	700	4,1-4,6	kp/cm²		
13	Full-load delivery without	900	61,0-62,0	cm ³ /1000 strokes		2,5
	charge-air pressure Full-load delivery with charge-air			cm ³ /1000 strokes		
14	pressure Idle speed regulation	250	13,0-19,0	cm ³ /1000 strokes	i 	3,0
15	Start	100	mind.80,0	cm ³ /1000 strokes		
16	Full-load speed regulation	1170	26,0-34,0	cm ³ /1000 strokes		

2. Test Sp	ecificatio	NS Checking value			
21 Timing device	rev/min	420-530(390-	·560)	700	960-1060
	mm	Start	(3,	5-5,1)	8,7-9,4(8,4-9,7)
22 Supply pump	rev/min	100		700	1100
z z Guppiy pomp	kp/cm ²	1,0-1,5(0,8-	-1,7) (3,	9-4,8)	5,5-6,0(5,3-6,2)
Overflow delivery	rev/min	500 mind. 25			1000 55-125(40-140)
23 Fuel deliveries					
Speed control lever	Delivery lever	rev/min	cm ³ /1000 strokes		Charge-air pressure kp/cm ²
End stop	Full	1230-1290 (1210-1310) 1170 1030 900 450		(25,0-35,0) (59,5-63,5) (60,5-62,5) (56,5-62,5)	
	Stop	1100	0		
Idle stop	Full	300-360 (280-380) 250	0	(12,0-20,0)	
End stop	Start	100 110-210	mind.80,0		

Angle to the stop-plate	Pre-setting dimensions
Pump $\alpha = 25 \pm 4^{\circ}$ $\beta = 35 \pm 8^{\circ}$ $\gamma = 30 - 8^{\circ}$ $\delta = 60 + 8^{\circ}$	Pump Dimension IV = 3,5 mm Dimension V = - mm

WPP 001/4 FIA 3,5 b

3. Edition

0 460 314 034

Pre-stroke setting

Nozzle-and-holder assembly VA 4/110 H 1250 CL 136-6 1 688 901 020 (172 + 3 bar)

Setting of the pointer at a stroke of 1 mm in relation to outlet "A".

11.79 supersedes Fiat company

engine

8045-04270

 $0.5 \text{ mm} \pm 0.02 (\pm 0.04)$

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers Test Intructions and Test Equipment

VDT-WPP 161/4 B

Pre-setting see reverse side

1. Settings	rev/min	Settings	Charge-air press kp/cm²	Difference in delivery cm ³
1.1 Timing device travel	1000	4,7-5,5 mm		
1 2 Supply pump pressure	1000	5,3-5,8 kp/cm²		
Full-load delivery without charge-air pressure Full-load delivery with charge-air	1200	70,0-73,0 cm³/1000 strokes		2,5
pressure 1 4 Idle speed regulation	300	22,0-28,0 cm³/1000 stroke	 	3,0
1 5 Start	100	mind.110,0 cm ³ /1000 strokes	1	
1.6 Full-load speed regulation	1400	26,0-34,0 cm³/1000 stroke		

2. Test Spe	ecificatio	NS Checking value	s in brackets	1000	1100-1250
2.1 Timing device	rev/min	700		1000	
	mm	1,5-2,5(1,2-	-2,8)	(5,0-6,1)	6,1-6,8(5,8-7,1)
		200		1000	1100-1250
2.2 Supply pump	rev/min kp/cm²	1,5-2,0(1,3-	-2,2)	(5,1-6,0)	6,1-6,8(5,9-7,0)
	прист	500			1250
Overflow delivery	rev/min cm ³ /10 s	55-100(40-1	10)		55-100(40-110)
23 Fuel deliveries	L	<u></u>			
Speed control lever	Delivery lever	rev/min	cm ³ /1000 strokes		Charge-air pressure kp/cm ²
End stop	Full	1460-1510 (1440-1530) 1400 1200 800 500	0 70,5-71,5 62,0-65,0	(25,0-35,0) (69,0-74,0) (70,0-72,0) (61,0-66,0)	
	Stop	1250	0		
idle stop	Full	400-450 (380-470) 300	0	(21,0-29,0)	,
	Start	100	mind.110,	0	
End stop	1	110-230			

Angle to the stop-plate	Pre-setting dimensions	
Pump $\alpha = 25 \pm 4^{\circ}$ $\beta = 35 \pm 8^{\circ}$ $\gamma = 30 - 8^{\circ}$ $\delta = 60 + 8^{\circ}$	Pump Dimension IV = 3,60 mm Dimension V = 24,65 mm	

40

WPP 001/4 STE 2,3 c 3

1. Edition

VA 4/90 H 1200 CR 144 0 460 394 008

Testoil-ISO 4113

supersedes

company

Steyr WD 407

engine

Nozzle-and-holder assembly 1 688 901 020 (172 + 3 bar)

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers Test Intructions and Test Equipment

VDT-WPP 161/4 B

Pre-setting sec reverse side

Pre-stroke setting 0,3 mm \pm 0,02 (\pm 0,04) Plunger lift of 1,0 mm related to outlet "A"

1.	Settings	rev/min	Settings	Charge-air press kp/cm ⁻	Difference in delivery cm ³
11	Timing device travel	1000	4,8-5,8 mm		
12	Supply pump pressure	1000	5,2-5,7 kp/cm²		
13	Full-load delivery without	900	51,0-53,0 cm ³ /1000 s	trokes	2,5
	charge-air pressure Full-load delivery with charge-air	en en	cm ³ /1000 s	trokes	
14	pressure Idle speed regulation	300	7,0-13,0 cm ³ /1000 s	Irokes	3,0
	Start (autom.)	100	mind.75,0 cm ³ /1000s	trokes	
	Full-load speed regulation	1300	16,0-24,0 cm ³ /1000s	trokes	

2. Test Sp	ecificatio	NS Checking value			4440 4040
2 1 Timing device	rev/min	450-600(420	-630)	1000	1140-1240
	mm	Start		(4,5-6,1)	7,0-7,7(6,7-8,0)
22 Supply pump	rev/min	200		1000	1200
2.2 Supply hump	kp/cm [®]	1,4-1,9(1,2	-2,1)	(5,0-5,9)	6,0-6,5(5,8-6,7)
		500		*	1200
Overflow delivery	rev/min cm ³ /10 s	55-100(40-1	10)		55-100(40-110)
23 Fuel deliveries					
Speed control lever	Delivery lever	rev/min	cm ³ /1000 strokes		Charge-air pressure kp/cm ²
End stop	Full	1330-1390 (1310-1410) 1300 1150 900 500	0 54,0-55,5 51,0-53,0 51,0-54,5	(15,0-25,0) (53,0-56,5) (50,5-53,5) (50,0-55,5)	
	Stop	1200	0		
Idle stop	Full	390-440 (370-460) 300	0	(6,0-14,0)	
End stop	Start	100 150-250	mind.75,0	•	

Angle to the stop-plate	Pre-setting dimensions
Pump $\alpha = 25 \pm 4^{\circ}$ $\beta = 40 \pm 8^{\circ}$ $\gamma = 30 - 8^{\circ}$ $\delta = 60 + 8^{\circ}$	Pump Dimension IV = 3.0 mm Dimension V = 24.6 mm

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WPP 001/4 STE 2,3 c 1 2. Edition

En

VA 3/90 H 1200 CR 143 0 460 393 006 supersedes 7.71 Stey

engine

Steyr WD 307

Nozzle-and-holder assembly 1 688 901 020 (172 + 3 bar)

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers Test Intructions and Test Equipment

VDT-WPP 161/4 B

Pre-setting see reverse side

Pre-stroke setting 0,3 mm \pm 0,02 (\pm 0,04) Plunger lift of 1,0 mm related to outlet "A"

1.	Settings	rev/min	Settings		Charge-air press kp/cm ²	Difference in delivery cm ³
11	Timing device travel	1000	5,5-6,4	mm		
12	Supply pump pressure	1000	5,2-5,7	kp/cm²	·	
13	Full-load delivery without charge-air pressure	1200	53,5-54,5	cm ³ /1000 strokes		2,5
	Full-load delivery with charge-air			cm ³ /1000 strokes		
14	pressure Idle speed regulation	300	12,0-18,0	cm ³ /1000 strokes		3,0
15	Start (autom.)	100	mind.70,0	cm ³ /1000 strokes		
16	Full-load speed regulation	1300	13,0-21,0	cm ³ /1000 strokes		

2. Test Sp	ecificatio	NS Checking value			
2.1 Timing device	rev/min	400-550(370-	580)	1000	1120-1240
	mm	Start		(5,2-6,7)	6,9-7,6(6,6-7,9)
2.2 Supply pump	rev/min	200		1000	1200
	kp/cm ³	1,5-2,0(1,3-2	2,2)	(5,0-5,9)	5,9-6,4(5,7-6,6)
Overflow delivery	rey/min	500			1200
verilow delivery	cm ³ /10 s	55-100(40-110	0)		55-100(40-110)
23 Fuel deliveries					
Speed control lever	Delivery lever	rev/min	cm ³ /1000 stroke	?S	Charge-air pressure kp/cm ²
End stop	Fuli	1310-1410 (1320-1430) 1300 1200 800 500	0 51,0-54,0 54,0-57,0	(12,0-22,0) (53,0-55,0) (50,0-55,0) (53,0-58,0)	
	Stop	1200	0		
Idle stop	Full	400-460 (380-480) 300	0	(11,0-19,0)	
	Start	100	mind.70,0		
End stop	Jian	130-230			,

Testoil-

H3

BOSCH

Testoil-ISO 4113

Angle to the stop-plate	Pre-setting dimensions
Pump $\alpha = 25 \pm 4^{\circ}$ $\beta = 45 \pm 8^{\circ}$ $\gamma = 30 - 8^{\circ}$ $\delta = 60 + 8^{\circ}$	Pump Dimension IV = 3,0 mm Dimension V = 24,6 mm

WPP 001/4 IHC 3,9 d 1 2. Edition

VA 4/100 H 1250 CR 60 Ensemble injecteur/porte-injecteur 1 688 901 020 (172 + 3 bar) 0 460 304 102

Réglage de l'index pour une course de piston de 1 mm et rapporté à la sortie "A".

supersedes company

engine

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

Test Intructions and Test Equipment **VDT-WPP 161/4 B**

Pre-setting see reverse side

Pre-stroke setting

 $0.5_{nm} \pm 0.04$

1. Settings	rev/min	Settings		Charge-air press kp/cm ²	Difference in delivery cm ³
1.1 Timing device travel	900	4,5-5,5	mm		
1.2 Supply pump pressure	900	5,0-5,5	kp/cm²		
1.3 Full-load delivery without	900	71,5-72,5	cm ³ /1000 strokes		2,5
charge-air pressure Full-load delivery with charge	-air		cm ³ /1000 strokes		
pressure 1 4 Idle speed regulation	300 .	19,5-25,5	cm ³ /1000 strokes		3,0
1.5 Start 196 bar	100	mind.90,0	cm ³ /1000 strokes		
1 6 Full-load speed regulation	1300	31,0-39,0	cm ³ /1000 strakes		

2. Test Sp	ecification	ons Checking val 200-350 (170	ues in brackets	500	900	1130-1250
2.1 Timing device	rev/min	200-350(170		• • •	• - •	
	mm	Début	1,7-2	7(1,4-3,0)	(4,2-5,8)	7,0-7,7(6,7-8,0)
		200			900	1250
2.2 Supply pump	rev/min	1,9-2,4(1,7	-2,6)		(4,8-5,7)	6,3-6,8(6,1-7,0)
		500				1250
Overflow delivery	rev/min cm ³ /10 s	55-100(40-	110)			55-100(40-110)

23	Fuel	delive	ries

Speed control lever	Delivery lever	rev/min	cm ³ /1000 strokes		Charge-air pressure kp/cm ²
End stop	Full	1310-1360 (1290-1380) 1300 1260-1280 1200 900 500	0 Debut 71,0-74,0 66,5-69,5	(30,0-40,0) (70,0-75,0) (71,0-73,0) (65,5-70,5)	
	Stop	1250	0		
Idle stop	Full	410-480 (390-500) 300	0	(18,5-26,5)	
Butée de fin de course	Start	100 220-300	mind.90,0		

Angle to the stop-plate	Pre-setting dimensions	
Pump α = 25 ± 4° β = 45 ± 8°	Pump Dimension IV = 1,5 mm Dimension V = 24,6 mm	
$y = 30 - 8^{\circ}$		
δ = 60 ± 8°	·	

46

WPP 001/4 IHC 2,4 a 1

3. Edition

En

VA 3/100 H 950 CR 9 CR 9-2

Nozzle-and-holder assembly 1 688 901 020 (172 + 3 bar) supersedes 7.73
company IHC
engine D 155 tractor

E-423

Setting of the pointer at a stroke of 1 mm in relation to outlet "A".

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers Test Intructions and Test Equipment

Test Intructions and Test Equipment VDT-WPP 161/4 B

Pre-setting see reverse side

Pre-stroke setting 0,3 mm $(\pm 0,04)$

1. Settings	rev/min	Settings		Charge-air press kp/cm ²	Difference in delivery cm ³
1 1 Timing device travel	600	3,3-4,1	mm		
1.2 Supply pump pressure	600	4,8-5,3	kp/cm ²		
1.3 Full-load delivery without charge-air pressure	800	64,5-65,5	cm ³ /1000 strokes		2,5
Full-toad delivery with charge-air pressure			cm ³ /1000 strokes		
1.4 Idle speed regulation	350	12,0-18,0	cm ³ /1000 strokes	1	3,5
15 Start 196 bar	100	mind.90,0	cm ³ /1000 strokes		
1.6 Full-load speed regulation	1000	33,4-41,4	cm ³ /1000 strokes		

.	• • • • • • •				
2. Test Sp	ecificatio	NS Checking value			
2.1 Timing device	rev/min	120-250(90-2	80) 300	600	800-950
	mm	Start	0,8-1,8(0	,5-2,1)(3,0-4,	4) 4,7-5,4(4,4-5,7)
2.2 Supply pump	rev/min	200		600	950
	kp/cm²	2,3-2,8(2,1-	3,0)	(4,6-5,5)	6,3-6,8(6,1-7,0)
Overflow delivery	rev/min	500			950
Oyemow delivery	cm ³ /10 s	55-100(40-11	0)		55-100(40-110)
23 Fuel deliveries	<u> </u>				
Speed control lever	Delivery lever	rev/min	cm³/1000 strokes		Charge-air pressure kp/cm ²
End stop	Fulf	1050-1100 (1030-1120) 1000 960-980 930 800 500	0 Start 65,5-68,5 56,5-59,5	(32,4-42,4) (64,5-69,5) (64,0-66,0) (55,5-60,5)	
	Stop	950	0		
Idle stop	Full	400-460 (380-480) 350	0	(11,0-19,0)	
	Start	100	mind.90,0		
End stop		220-300			

ľ

H7

Testoil-ISO 4113

Angle to the stop-plate	Pre-setting d∞mensions	
Pump $a = 25 \pm 4^{\circ}$ $\beta = 40 \pm 8^{\circ}$ $\gamma = 30 - 8^{\circ}$ $\delta = 60 \pm 8^{\circ}$	Pump Dimension IV = 1,0 mm Dimension V = 24,6 mm	

H8

En

WPP 001/4 IHC 3,9 d 6

1. Edition

VA 4/100 H 1100 CR 69-2 0 460 304 172 Setting in accordance with WPP 161/4,1st. Supplement plunger lift 1.0 mm referenced to outlet "A".

supersedes

IHC

company engine

D 239-724

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

Test Intructions and Test Equipment VOT-WPP 161/4 B

Pre-setting see reverse side

Pre-stroke setting

Festoil-ISO 4113

mm

Nozzle-and-holder assembly 1 688 901 020 (172 + 3 bar)

1. Settings	rev/min	Settings		Charge-air press. kp/cm ²	Difference in delivery cm ³
1 1 Timing device travel	700	3,1-3,9	mm		
1.2 Supply pump pressure	700	5,0-5,5	kp/cm ²		
1.3 Full-load delivery without	800	66,0-67,0	cm ³ /1000 strokes		2,5
charge-air pressure Full-load delivery with charge-air			cm ³ /1000 strokes		
pressure 1 4 idle speed regulation	350	12,0-18,0	cm ³ /1000 strokes		3,0
1.5 Start 196 bar	100	mind.90,0	cm ³ /1000 strokes		•
1.6 Full-load speed regulation	1180	26,0-34,0	cm ³ /1000 strokes		

2. Test Sp 2.1 Timing device	rev/min	One Checking values in brackets [250-400 (220-430)]	700	900-1050
	mm	Start	(2,8-4,2)	4,7-5,4(4,4-5,7)
2.2 Supply pump	rev/min	200	700	1100
E.E. Outpiy pomp	kp/cm²	2,2-2,7(2,0-2,9)	(4,8-5,7)	6,5-7,0(6,3-7,2)
O confirmental mana		500		1100
Overflow delivery	rev/min cm ³ /10 s	55-100(40-110		55-100(40-110)

231	Fuel	deliv	eries
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Speed control lever	Delivery lever	rev/min	cm ³ /1000 strokes		Charge-air pressure kp/cm [®]
End stop	Full	800	0 69,5-72,5 63,0-65,0	(25,0-35,0) (68,5-73,5) (65,5-67,5) (62,0-66,0)	
	Stop	1100	0		
Idle stop	Full	410-470 (390-490) 350	0	(11,0-19,0)	
End stop	Start	100 220-300	mind.90,0		·

Testoil-ISO 4113

Angle to the stop-plate	Pre-setting dimensions	
Pump $\alpha = 25 \pm 4^{\circ}$ $\beta = 40 \pm 8^{\circ}$ $\gamma = 30 - 8^{\circ}$ $\delta = 60 \pm 8^{\circ}$	Pump Dimension IV = 2,0 mm Dimension V = 24,6 mm	

WPP 001/4 IHC 5,8 p

3. Edition

VA 6/110 H 1150 CR 180-4 . CR 180-4 P Nozzle-and-holder assembly 1 688 901 020 (172 + 3 bar)

5.79

0 460 316 032

Setting of the pointer at a stroke of 1 mm in relation to outlet "A".

engine DT 358/3980B/3984B

supersedes

company

 $0.5 \text{ mm} \pm 0.02(\pm 0.04)$ Pre-stroke setting

All test specifications are valid for **Bosch Fuel Injection Pump Test Benches** and Testers

Test Intructions and Test Equipment

VDT-WPP 161/4 B

Pre-setting see reverse side

1. Settings	rev/min	Settings		Charge-air press kp/cm ²	Difference in delivery cm ³
1 1 Timing device travel	800	5,4-6,4	mm	0	
1.2 Supply pump pressure	800	4,9-5,4	kp/cm ²	0	
1.3 Full-load delivery without	500	77,0-80,0	cm ³ /1000 strokes	0,1	2,5
charge-air pressure Full-load delivery with charge-air	800	92,5-93,5	cm ³ /1000 strokes	0,5	
pressure 1.4 Idle speed regulation	700	7,0-13,0	cm ³ /1000 strokes	0	3,0
1 5 Start	100	mind.100,0	cm ³ /1000 strokes	0	
1 6 Full-load speed regulation	1200	41,0-49,0	cm ³ /1000 strokes	0,5	

2. Test Spe	rev/min	NS Checking value 130-280 (100-3		800	980-1130
2,	mm	Start	•	,5-3,1)(5,1-6	6,7) 6,9-7,6(6,6-7,9)
2.2 Supply pump	rev/min	200		800	1150
	kp/cm²	1,8-2,3(1,6-2	2,5)	(4,7-5	,6) 6,3-6,8(6,1-7,0)
Overflow delivery	rev/min	500			1150
C.C. non delivery	cm ³ /10 s	55-100(40-110	0)		55-100(40-110)
2.3 Fuel deliveries			· 		
Speed control lever	Delivery lever	rev/min	cm ³ /1000 strokes		Charge-air pressure kp/cm ^{\$}
End stop	Full	1250-1320 (1230-1340) 1200	0	(40,0-50,0)	0,5 0,5
		1130-1160 1100 1000 800 500	Start 85,0-88,0 85,0-87,0	(84,0-89,0) (84,0-88,0) (92,0-94,0) (76,0-81,0)	0,5 0,5 0,5
	Stop	1150	0		
Idle stop	Full	760-810 (740-830) 700	0	(6,0-14,0)	
	Start	100	mind.100,0		
End stop		260-360			

Angle to the stop-plate	Pre-setting dimensions	
Pump $\alpha = 25 \pm 4^{\circ}$ $\beta = 35 \pm 8^{\circ}$ V δ	Pump Dimension IV = 0,60 mm Dimension V = 24,65 mm	

46

WPP 001/4 IHC 5,8 a

3. Edition

VA 6/110 H 1250 CR 180-3 Nozzle-and-holder assembly 0 460 316 030 1 688 901 020 (172 + 3 bar) Setting of the pointer at a stroke of 1 mm in relation to outlet "A".

supersedes 5.79
IHC

company DT 358/3990

retation to outlet A.

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers Test Intructions and Test Equipment VDT-WPP 161/4 B

980-1130

Pre-setting see reverse side

Pre-stroke setting

2. Test Specifications

2.1 Timing device | rev/min

 $0.5 \text{ mm} \pm 0.02(\pm 0.04)$

1.	Settings	rev/min	Settings		Charge air press kp/cm ²	Difference in delivery cm ³
1.1	Timing device travel	800	5,4-6,4	mm	0	
1.2	Supply pump pressure	800	4,9-5,4	kp/cm ²	0	
13	Full-load delivery without	500	75,0-78,0	cm ³ /1000 strokes	0,1	2,5
	charge-air pressure Full-load delivery with charge-air	800	90,5-91,5	cm ³ /1000 strokes	0,5	
14	pressure Idle speed regulation	350	12,0-18,0	cm ³ /1000 strokes	0	3,0
15	Start	100	mind.100,0	cm ³ /1000 strokes	0	
16	Full-load speed regulation	1310	41,0-49,0	cm ³ /1000 strokes	0,5	

400

800

Checking values in brackets

150-300(120-330)

21 Himing device	revimin	1			
-	mm	Start	2,0-4,0(1,7	-4,3) (5,1-6	,7) 6,9-7,6(6,6-7,9)
22 Supply pump	rev/min kp/cm²	200 1,8-2,3(1,6-7		800 (4,7-5,	1250 6) 6,5-7,0(6,3-7,2)
Overflow delivery	rev/min cm ³ /10 s	500 55-100(40-1			1250 55-100(40-110)
23 Fuel deliveries					
Speed control lever	Delivery lever	rev/min	cm ³ /1000 strokes		Charge-air pressure kp/cm ²
End stop	Full	1350-1420 (1330-1440) 1310 1240-1270 1200 1000 800 500	0 Start 88,0-91,0 90,0-92,0	(40,0-50,0) (87,0-92,0) (89,0-93,0) (90,0-92,0) (74,0-79,0)	0,5 0,5
	Stop	1250	0		
Idle stop	Full	480-530 (460-550) 350	0	(11,0-19,0)	
	Start	100	mind. 100,0		
End stop		220-320			

H13

BOSCH

Angle to the stop-plate	Pre-setting dimensions
Pump $\alpha = 25 \pm 4^{\circ}$ $\beta = 40 \pm 8^{\circ}$ γ	Pump Dimension IV = 0,60 mm Dimension V = 24,65 mm

WPP 001/4 IHC 5,8 g 2

1. Edition

VA 6/110 H 1100 CR 180-2 0 460 316 022

2. Test Specifications

supersedes

IHC DT 358

company engine

(13,5-21,5)

Nozzie-and-holder assembly 1 688 901 020 (172 + 3 bar)

All test specifications are valid for

Pre-stroke setting

 $0.5^{\text{mm}} \pm 0.02(\pm 0.04)$

Plunger lift of 1,0 mm related to outlet "A"

Bosch Fuel Injection Pump Test Benches and Testers Test Intructions and Test Equipment

VDT-WPP 161/4 B

Pre-setting see reverse side

1	. Settings	rev/min	Settings		Charge-air press kp/cm²	Difference in delivery cm ³
91	Timing device travel	800	5,7-6,7	mm	0	
12	Supply pump pressure	800	4,8-5,3	kp/cm²	0	
13	Full-load delivery without	500	78,5-81,5	cm ³ /1000 strokes	0,2	
	charge-air pressure Full-load delivery with charge-air	800	85,5-86,5	cm ³ /1000 strokes	0,4	2,5
14	pressure I ldle speed regulation	450	14,5-20,5	cm ³ /1000 strokes	0	3,0
1 5	5 Start	100	mind.95,0	cm ³ /1000 strokes	0	
10	6 Full-load speed regulation	1180	41,0-49,0	cm ³ /1000 strokes	0,4	

Checking values in brackets

21 Timing device	rev/min	1200-350(170-	380)	400 80	900-1050
	mm	Start	1,0-2,0	(0,7-2,3) (5,4-	7,0) 6,9-7,6(6,6-7,9)
22 Supply pump	rev/min kp/cm ²	200 1,3-1,8(1,1-		80 (4,6-5,	0 1100 5) 6,0-6,4(5,8-6,6)
Overflow delivery	rev/min cm ³ /10 s	500 55-100(40-11			1100 55-100(40-110)
23 Fuel deliveries					
Speed control lever	Delivery lever	rev/min	cm ³ /1000 strok	es	Charge-air pressure kp/cm ²
End stop	Fuil	1210-1280 (1190-1300) 1180 1100-1130 1050 800 500	0 Start 86,5-89,5	(40,0-50,0) 5 (85,5-90,5) (85,0-87,0) (77,5-82,5)	0,4
	Stop	11.00	0		
Idle stop	Full	530-580 (510-600)	0	440	

End stop

Start

mind.95,0

450

100

220-320

Angle to the stop-plate	Pre-setting dimensions	
Pump α = 25 ± 4° β = 40 ± 8° γ	Pump Dimension IV = 0,60 mm Dimension V = 24,60 mm	

4.79

WPP 001/4 IHC 5,8 9

5. Edition

En

VA 6/110 H 1250 CR 180 CR 180 P

Nozzle-and-holder assembly 1 688 901 020 (172 + 3 bar)

supersedes company

compa engine IHC DT 358 H 65 C

0 460 316 013/016

Setting of the pointer at a stroke of 1 mm in relation to outlet "A".

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers Test Intructions and Test Equipment

VDT-WPP 161/4 B

Pre-stroke setting

 $0.5_{mm} \pm 0.02 (\pm 0.04)$

Pre-setting see reverse side

1.	Settings	rev/min	Settings		Charge-air press kp/cm ²	Difference in delivery cm ²
11	Timing device travel	800	5,4-6,4	mm	0	
1.2	Supply pump pressure	800	4,9-5,4	kp/cm²	0	
1.3	Full-load delivery without	500	75,0-78,0	cm ³ /1000 strakes	0,1	2,5
	charge-air pressure Full-load delivery with charge-air	800	90,5-91,5	cm ³ /1000 strokes	0,6	
14	pressure Idle speed regulation	350	12,0-18,0	cm³/1000 strokes	0	3,0
	Start	100	mind.100,0	cm ³ /1000 strokes	0	
"	Full-load speed regulation	1310	41,0-49,0	cm ³ /1000 strokes	0.6	

2. Test Sp	ecificati	ions Checking values i 150-300 (120-33	n brackets		
21 Timing device	rev/min	150-300(120-33	0) 400	800	980-1130
	mm	Start		(5,1-6,7)	6,9-7,6(6,6-7,9)
		200		800	1250
2.2 Supply pump	rev/min kp/cm²	1,8-2,3(1,6-2,	5)	(4,7-5,6)	6,5-7,0(6,3-7,2)
		500			1250
Overflow delivery	rev/min cm ³ /10 s	55-100(40-110)			55-100(40-110)

Speed control lever	Delivery lever	rev/min	cm ³ /1000 strokes		Charge-air pressure kp/cm ²
End stop	Full	1350-1420 1310 1200 1000 800 500	0 41,0-49,0 88,0-91,0 90,0-92,0	(40,0-50,0) (87,0-92,0) (89,0-93,0) (90,0-92,0) (74,5-78,5)	0,6 0,6 0,6
	Stop	1250	0		
Idle stop	Full	480-530 (450-560) 350	0	(11,0-19,0)	
End stop	Start	100 220-320	mind.100,0		

H17

BOSCH

Angle to the stop-plate	Pre-setting dimensions
Pump $\alpha = 25 \pm 4^{\circ}$ $\beta = 40 \pm 8^{\circ}$ V δ	Pump = 0,6 mm Dimension IV Dimension y = 24,6 mm

46

WPP 001/4 FIA 5,2 c

3. Edition

En

VA 6/11 H 1275 CR 185-3 Nozzle-and-holder assembly 0 460 316 041 1 688 901 020 (172 + 3 bar) Setting of the pointer at a stroke of 1 mm in relation to outlet "A".

supersedes Fiat company

engine 8065.04.217

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers Test Intructions and Test Equipment

VDT-WPP 161/4 B
Pre-setting see reverse side

Pre-stroke setting

estoil-ISO 4113

 $0.5 \text{ mm} \pm 0.02 (\pm 0.04)$

1. 5	Settings	rev/min	Settings		Charge air press kp/cm²	Difference in delivery cm ³		
1.1 Ti	ming device travel	1000	5,8-6,6	mm				
1.2 St	upply pump pressure	1000	5,7-6,2	kp/cm ²				
	ull-load delivery without harge-air pressure	800	74,0-75,0	cm ³ /1000 strokes		2,5		
	ull-load delivery with charge-air ressure			cm ³ /1000 strokes				
	lle speed regulation	350	12,0-18,0	cm ³ /1000 strokes	İ	3,0		
1.5 St	tart	100	mind.120,0	cm ³ /1000 strokes				
16 F	uil-ioad speed regulation	1400	38,0-46,0	cm ³ /1000 strokes				

2. Test Sp	ecificatio	NS Checking value	es in brackets 600	1000	1275
2.1 Timing device	rev/min	1			
	mm	Start	1,8-2,8(1,5	(-3,1)(5,5-6,9)	9) 7,0-7,7(6,7-8,0)
		200		1000	1275
2.2 Supply pump	rev/min kp/cm²	1,7-2,2(1,5-	2,4)	(5,5-6,	4) 6,7-7,2(6,5-7,4)
	kp/cm	500			1275
Overflow delivery	rev/min cm ³ /10 s	55-100(40-11			55-100(40-110)
23 Fuel deliveries					
Speed control lever	Delivery lever	rev/min	cm ³ /1000 strokes		Charge-air pressure kp/cm ²
End stop	Futt	1440-1500 (1420-1520) 1400 1250 800 500	0 70,5-73,5 64,5-67,5	(37,0-47,0) (69,5-74,5) (73,5-75,5) (63,5-68,5)	
	Stop	1275	0		
Idle stop	Full	470-520 (450-540) 350	0	(11,0-19,0)	
	Start	100	mind.120,0		
End stop		110-230			

H19

Angle to the stop-plate	Pre-setting dimensions
Pump $\alpha = 25 \pm 4^{\circ}$ $\beta = 51 \pm 8^{\circ}$ $\gamma = 30 - 8^{\circ}$ $\delta = 60 + 8^{\circ}$	Pump Dimension IV = 2,00 mm Dimension V = 24,65 mm

Test Specifications Distributor-Type Fuel Injection Pump^{3. Edition}

WPP 001/4 FIA 5,2 b

VA 6/110 H 1200 CR 185-2 Nozzle-and-holder assembly 0 460 316 034

1 688 901 020 (172 + 3 bar)

Setting of the pointer at a stroke of 1 mm in relation to outlet "A".

supersedes 5.79 company Fiat

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

8065.04

Test Intructions and Test Equipment **VDT-WPP 161/4 B**

engine

Pre-setting see reverse side

Pre-stroke setting

 $0.5^{mm} \pm 0.02(\pm 0.04)$

1. Settings	rev/min	Settings	Charge-air press kp/cm ²	Difference in delivery cm ³
1 1 Timing device travel	1000	5,7-6,7 mm		
1.2 Supply pump pressure	1000	5,4-5,9 kp/cm ²		
1 3 Full-load delivery without	800	71,0-72,0 cm ³ /1000 strokes		2,5
charge-air pressure Full-load delivery with charge-air	-	cm ³ /1000 strokes		
pressure 1.4 Idle speed regulation	350	12,0-18,0 cm ³ /1000 strokes		3,0
1 5 Start	100	mind.110,0 _{cm} 3 _{/1000 strokes}		
1 6 Full-load speed regulation	1300	38,0-46,0 cm3/1000 strokes		

2.1 Timing device 2.2 Supply pump Overflow delivery	rev/min mm rev/min kp/cm²	300-450(270 Start 200 1,2-1,7(1,0 500	-480) 8 3,9-4,9 -1,9)	0(3,5-4,2)(5,4	000	1030-1180 7,0-7,7(6,7-7,9) 1200 6,2-6,7(6,0-6,9) 1200
23 Fuel deliveries Speed control lever	cm ³ /10 s	55-100(40-	110)		Charge-a	55-100(40-110)
End stop	Full	1370-1430 (1350-1450) 1300 1250-1270 1180 800 500	Start 67.0-70.0	(37,0-47,0) (66,0-71,0) (70,5-72,5) (58,5-63,5)		
	Stop	1200	0			
idle stop	Full	470-520 (450-540) 350	0	(11,0-19,0)		
End stop	Start	100 110-230	mind. 110,	.0		

Angle to the stop plate	Pre-setting dimensions
Pump $\alpha = 25 \pm 4^{\circ}$ $\beta = 54 \pm 8^{\circ}$ $Y = 30 - 8^{\circ}$ $\delta = 60 + 8^{\circ}$	Pump = mm Dimension IV = mm Dimension V

WPP 001/4 FIA 5,2 a 1

2. Edition

VA 6/110 H 1200 CR 185-1 0 460 316 026

· Nozzle-and-holder assembly 1 688 901 020 (172 + 3 bar)

4.76 supersedes Fiat cempany 8065.04.207

engine

Setting of the pointer at a stroke of 1 mm in relation to outlet "A".

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers Test Intructions and Test Equipment

VDT-WPP 161/4 B Pre-setting see reverse side

Pre-stroke setting

 $0.5 \text{ mm} \pm 0.02(\pm 0.04)$

1. Settings	rev/min	Settings		Charge-air press kp/cm ²	Difference in delivery cm ³
1.1 Timing device travel	1000	5,7-6,7	mm		
1.2 Supply pump pressure	1000	5,4-5,9	kp/cm ²		
1.3 Full-load delivery without charge-air pressure	800	69,5-70,5	cm ³ /1000 strokes	1	2,5
Full-load delivery with charge-air			cm ³ /1000 strokes		
pressure 1 4 Idle speed regulation	350	12,0-18,0	cm³/1000 strokes		3,0
1 5 Start	100	mind.120,0	cm ³ /1000 strokes		
16 Full-load speed regulation	1300	38,0-46,0	cm ³ /1000 strokes		

2. Test Sp	ecificatio	NS Checking value Start	s in brackets			
21 Timing device	rev/min mm	390-450(2/0-	480) 600	800 10 9(3,6-5,2(5,4	000 -7,0) 7,0	1030-1180 -7,7(6,7-8,0)
22 Supply pump	rev/min	200	2,2)		000 6.1) 6.2-	1200 6,7(6,0-6,9)
Overflow delivery	rev/min cm ³ /10 s	500 55-100(40-11		, , ,		1200 55-100(40-110)
23 Fuel deliveries						
Speed control lever	Delivery lever	rev/min	cm ³ /1000 strokes		Charge-air pre	ssure kp/cm ²
End stop	Full	1380-1440 (1360-1460) 1300 1250-1270 1180 800 500	0 Start 71,0-74,0 58,0-61,0	(69,0-71,0)		
	Stop	1200	0			
idie stop	Full	470-520 (450-540) 350	0	(11,0-19,0)		
End stop	Start	100 110-230	mind. 120,	0		

Geschaftsbereich KH. Kundendienst. Kfz-Ausrustung.

1980 by Robert Bosch GmbH. Postfach 50, D-7000 Stuttgart 1. Printed in the Federal Republic of Germany Imprumé en République Fédérale d'Allemagne par Robert Bosch GmbH.

Testoil-ISO 4113

Angle to the stop-plate	Pre-setting dimensions	
Pump $\alpha = 25 \pm 4^{\circ}$ $\beta = 54 \pm 8^{\circ}$ $\gamma = 30 - 8^{\circ}$ $\delta = 60 + 8^{\circ}$	Pump = 3,6 mm Dimension IV Dimension V = 24,6 mm	

WPP 001/4 FIA 5,2 a

2. Edition

VA 6/110 H 1200 CR 185 0 460 316 024

Nozzle-and-holder assembly 1 688 901 020 (172 + 3 bar)

6.75 supersedes Fiat company 8065.02 engine.

Setting of the pointer at a stroke of 1 mm in relation to outlet "A".

2. Test Specifications Checking values in brackets

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

Test Intructions and Test Equipment **VDT-WPP 161/4 B**

 $0.5 \text{ mm} \pm 0.02(\pm 0.04)$ Pre-stroke setting

13
41
0
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O

		F	re-setting see revers	se side
1. Settings	rev/min	Settings	Charge-air press kp/cm ²	Difference in delivery cm ³
1.1 Timing device travel	1000	5,7-6,7 mm		
1.2 Supply pump pressure	1000	5,4-5,9 kp/cm ²		
1.3 Full-load delivery without charge-air pressure	800	63,0-64,0 cm ³ /1000 stroke		2,5
Full-load delivery with charge-air		cm ³ /1000 stroke	s	
pressure 1 4 Idle speed regulation	350	12,0-18,0 cm³/1000 stroke	s	3,0
15 Start	100	mind.120,0cm ³ /1000 stroke	s	
16 Full-load speed regulation	1300	31,0-39,0 cm ³ /1000 stroke	s	

2 1 Timing device	rev/min	300-450(270-		600	1000	1030-1180
	mm	Start	1,6-2,6(1,3-2,9) (5,4	4-7,0) 7,0	1-7,7(6,7-8,0)
2.2 Supply pump	rev/min	200			1000	1200
Z Z Ouppry pap	kp/cm²	1,5-2,0(1,3-	2,2)	(!	5,2-6,1)6,	2-6,7(6,0-6,9)
Overflow delivery	rev/min	500				1200
Overnous denvery	cm ³ /10 s	55-100(40-11	0)		55	5-100(40-110)
23 Fuel deliveries						
Speed control lever	Delivery lever	rev/min	cm ³ /1000 strokes		Charge air pres	ssure kp/cm ²
End stop	Full	1360-1420 (1340-1440)	0			
		1300	62.0-65.0	(30,0-40,0) (61,0-66,0) (62,5-64,5) (45,5-50,5)		
		800	46 5 40 5	(62,5-64,5)		
		500	40,5-49,5	(45,5-50,5)		
	Stop	1200	0			
idle stop	Full	470-520	0			
		(450-540) 350		(11,0-19,0)		
•		100	mind.120,0		0	
End stop	Start	110-230				
		<u></u>				

Testoil-ISO 4113

Angle to the stop-plate	Pre-setting dimensions
Pump $\alpha = 25 \pm 4^{\circ}$ $\beta = 50 \pm 8^{\circ}$ $\gamma = 30 - 8^{\circ}$ $\delta = 60 + 8^{\circ}$	Pump Dimension IV = 3,6 mm Dimension V = 24,6 mm

WPP 001/4 IHC 4,4 c

2. Edition

VA 4/110 H 1200 CR 188-1 .

CR 188-1 P Nozzle-and-holder assembly

1 688 901 020 (172 + 3 bar) 0 460 314 039 Setting of the pointer at a stroke of 1 mm in

relation to outlet "A".

Pre-stroke setting

 $0,5 \text{ mm} \pm 0,02(\pm 0,04)$

1.79 supersedes IHC company

D 268/270 A engine

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

Test Intructions and Test Equipment

VDT-WPP 161/4 B

			PI	e-setting see revers	e side
1. Settings	rev/min	Settings		Charge-air press kp/cm ²	Difference in delivery
1.1 Timing device travel	700	4,8-5,8	mm .		
1 2 Supply pump pressure	700	4,4-4,9	kp/cm²		
1.3 Full-load delivery without charge-air pressure	800	77,5-78,5	cm ³ /1000 strokes		2,5
Full-load delivery with charge-air			cm³/1000 strokes		
pressure 1 4 Idle speed regulation	400	11,0-17,0	cm ³ /1000 strokes		3,0
1 5 Start	100	mind.95,0	cm ³ /1000 strokes		
1 6 Full-load speed regulation	1280	34,0-42,0	cm ³ /1000 strokes		

2. Test Sp	ecificatio	NS Checking value	s in brackets			
-	rev/min	220-370(190-	400) 40	00	700	770-920
	mm	Start	1,2-2,2(0,9	9-2,5)	(4,5-6,	1) 6,1-6,8(5,8-7,1)
2 2 Supply pump	rev/min	200			700	1200
	kp/cm²	1,7-2,2(1,5-	2,4	((4,2-5,	1) 6,4-6,9(6,2-7,1)
Overflow delivery	rev/min	500				1200
•	cm ³ /10 s	55-100(40-11	0)			55-100(40-110)
23 Fuel deliveries	<u> </u>					
Speed control lever	Delivery lever	rev/min	cm ³ /1000 strokes		İ	Charge-air pressure kp/cm ²
End stop	Full	1330-1380 (1310-1400) 1280 1150 800 500	0 80,0-83,0 74,0-77,0	(33,0 (79,0 (77,0 (73,0	-43,0) -84,0) -79,0) -78,0)	
	Stop	1200	0			
Idle stop	Full	450-530 (440-550) 400	0	(10,0	-18,0)	
End stop	Start	100 250-350	mind.95,0		:	

Angle to the stop-plate	Pre-setting dimensions
$ \rho_{\alpha}^{\text{Pump}} = 25 \pm 4^{\circ} $ $ \beta = 36 \pm 8^{\circ} $ $ Y = 30 - 8^{\circ} $	Pump = 1,60 mm Dimension V = 24,65 mm
δ = 60 + 8°	

WPP 001/4 IHC 3.9 k

2. Edition

VA 4/100 H 1200 CR 187

CR 187 P

Nozzle-and-holder assembly

0 460 304 232/233 P 1 688 901 020 (172 \div 3 bar) engine Setting of the pointer at a stroke of 1 mm in

relation to outlet "A".

Test Specifications

Pre-stroke setting

0,5 mm $\pm 0,02 (\pm 0,04)$

8.77 supersedes

IHC company D 239

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

Test Intructions and Test Equipment VDT-WPP 161/4 B

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ės.

		Pr	e-setting see revers	ie side
rev/min	Settings		Charge-air press	Difference in delivery cm ³
900	3,6-4,6	mm		
900	4,7-5,2	kp/cm ²		
800	70,0-71,0	cm ³ /1000 strokes		2,5
		cm³/1000 strokes		
350	12,0-18,0	cm ³ /1000 strokes		3,0
100	mind.85,0	cm ³ /1000 strokes		
1300	24,0-32,0	cm ³ /1000 strokes		
	900 900 800 350 100	900 3,6-4,6 900 4,7-5,2 800 70,0-71,0 350 12,0-18,0 100 mind.85,0	900 3,6-4,6 mm 900 4,7-5,2 kp/cm² 800 70,0-71,0 cm³/1000 strokes cm³/1000 strokes 12,0-18,0 cm³/1000 strokes 100 mind.85,0 cm³/1000 strokes	900 3,6-4,6 mm 900 4,7-5,2 kp/cm² 800 70,0-71,0 cm³/1000 strokes cm³/1000 strokes 12,0-18,0 cm³/1000 strokes 100 mind.85,0 cm³/1000 strokes

2. Test Sp 21 Timing device	rev/min	Checking value	es in brackets 500	900	1000-1150
2 i inning device	mm	Start 1,3-	-2 3(1 0-2 6		4,7-5,4(4,4-5,7)
			2,3(1,0-2,0		
2.2 Supply pump	rev/min	200		900	1200
	kp/cm²	1,4-1,9(1,2-	-2,1)	(4,5-5,4)	5,7-6,2(5,5-6,4)
Overflow delivery	rev/min	500			1200
Overnow delivery	cm ³ /10 s	55-100(40-11	0)		55-100(40-110)
23 Fuel deliveries		<u> </u>			
Speed control lever	Delivery lever	rev/min	cm ³ /1000 strokes		Charge-air pressure kp/cm ²
End stop	Full	1330-1380	0		
		(1310-1400)		(22 2 22 2)	
		1300 1220-1240	Start	(23,0-33,0)	
		1180	74,0-77,0	(73,0-78,0)	
		800	, . , . , .	(69,5-71,5)	
		500	68,0-71,0	(69,5-71,5) (67,0-72,0)	
		1200			
	Stop	1200	0		
Idle stop	Full	420-490	0		
		(400-510)			
	1	350		(11,0-19,0)	
		100	mind.85,0		
End ston	Start	1			
End stop		250-350			

Angle to the stop-plate	Pre-setting dimensions
Pump $\alpha = 25 \pm 4^{\circ}$ $\beta = 40 \pm 8^{\circ}$ $Y = 30 - 8^{\circ}$ $\delta = 60 + 8^{\circ}$	Pump Dimension IV = 1,80 mm Dimension V = 24,65 mm

WPP 001/4 IHC 5,8 u

2. Edition

VA 6/10 H 1500 CR 189-1

CR 189 1P

Nozzle-and-holder assembly

1 688 901 020 (172 + 3 bar) Setting of the pointer at a stroke of 1 mm in

IHC company D 358/1730 B engine

supersedes

0 460 306 258

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

1500

relation to outlet "A".

2. Test Specifications Checking values in brackets 600

Test Intructions and Test Equipment **VDT-WPP 161/4 B**

3.81

 $0.4 \text{ mm} \pm 0.02 (\pm 0.04)$ Pre-stroke setting

Testoil-ISO 4113

			PrPr	e-setting see revers	e side
1. Settings	rev/min	Settings		Charge air press kp/cm ²	Difference in delivery cm ²
1 1 Timing device travel	1000	4,7-5,5	mm		
1.2 Supply pump pressure	1000	5,4-5,9	kp/cm ²		
1 3 Full-load delivery without charge-air pressure	900	68,0-69,0	cm ³ /1000 strokes		2,5
Full-load delivery with charge-air pressure			cm ³ /1000 strokes	<u> </u>	
1.4 Idle speed regulation	330	15,0-21,0	cm ³ /1000 strokes		3,0
1.5 Start	100	mind.75,0	cm ³ /1000 strokes		
1 6 Full-load speed regulation	1550	36,0-44,0	cm ³ /1000 strokes		

1000

1200

2.1 Timing device	Lea/win	Chana				
	mm	1,2-2,2(0,9-2)	2,5) (4,4-5,	8) 6,1-7,1(5,	8-7,4)	7,0-7,7(6,7-8,0)
2.2 Supply pump	rev/min	200	100	0		1500
	kp/cm²	1,6-2,1(1,4-	2,3) (5,2-6,	1)		7,2-7,7(6,9-8,0)
Overflow delivery	rev/min	500				1500
•	cm ³ /10 s	55-100(40-11	0)			55-100(40-110)
23 Fuel deliveries						
Speed control lever	Delivery lever	rev/min	cm ³ /1000 strokes		Charge-air	pressure kp/cm ²
End stop	Full	1610-1660 (1590-1680) 1550 1450 900 500	,	(35,0-45,0) (63,0-68,0) (67,5-69,5) (59,0-65,0)		
	Stop	1500	0			
Idle stop	Full	380-430	0			

End stop

mind.75,0

(14,0-22,0)

(360-450)

330

100

260-360

Angle to the stop-plate	Pre-setting dimensions	
Pump $\alpha = 25 \pm 4^{\circ}$ $\beta = 49 \pm 8^{\circ}$ $Y = 30 - 8^{\circ}$ $\delta = 60 + 8^{\circ}$	Pump Dimension IV = 2,30 mm Dimension V = 24,65 mm	

WPP 001/4 FIA,3,6 a

engine

3. Edition

VA 4/110 H 1600 CR 190 O 460 314 033 Nozzle-and-holder assembly 1 688 901 020 (172 + 3 bar)

Setting of the pointer at a stroke of 1 mm in relation to outlet "A".

Pre-stroke setting

 $0.5 \text{ mm} \pm 0.02 (\pm 0.04)$

company Fiat 8040.04

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers Test Intructions and Test Equipment

VDT-WPP 161/4 B
 Pre-setting see reverse side

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			e setting secretors	
1. Settings	rev/min	Settings	Charge-air press kp/cm ²	Difference in delivery cm ³
1.1 Timing device travel	1000	4,6-5,6 mm		
1.2 Supply pump pressure	1000	5,3-5,8 kp/cm²		
1.3 Full-load delivery without	700	71,0-72,0 cm ³ /1000 strokes		2,5
charge-air pressure Full-load delivery with charge-air		cm ³ /1000 strokes		
pressure 1.4 Idle speed regulation	300	14,0-20,0 cm ³ /1000 strokes		3,0
1.5 Start	100	mind.110,0cm ³ /1000 strokes		
1 6 Full-load speed regulation	1750	36,0-44,0 cm ³ /1000 strokes		

ecificatio	1S Checking values			4450 4600
rev/min	430-580(400-			
mm	Start	(4,3-5,9)9,3	3-10,3 (9,0-1	0,6)10,7-11,4(10,4-11,7)
sov/min	200	1000		1600
kp/cm²	1,0-1,5(0,8-	1,7) (5,1-6	,0)	7,5-8,0(7,3-8,2)
	500			1600
rev/min cm ³ /10 s	55-100(40-1	10)		55-100(40-110)
Delivery lever	rev/min	cm ³ /1000 strokes		Charge-air pressure kp/cm ³
Full	1930-2000 (1910-2020) 1750 1640-1660 1600 1000 700 500	0 Start 65,0-68,0 72,0-75,0 59,0-62,0	(35,0-45,0) (64,0-69,0) (71,0-76,0) (70,5-72,5) (58,0-63,0)	·
Full	330-380 (310-400) 300	0	(13,0-21,0)	
Start	100	mind.110,0		
	350-450			
	rev/min kp/cm² rev/min cm³/10 s Delivery lever Full Stop	rev/min	rev/min	rev/min

Angle to the stop-plate	Pre-setting dimensions
Pump $\alpha = 25 \pm 4^{\circ}$ $\beta = 50 \pm 8^{\circ}$ $\gamma = 30 - 8^{\circ}$ $\delta = 60 + 8^{\circ}$	Pump Dimension IV = 4,60 mm Dimension V = 24,65 mm

WPP 001/4 IHC 5,8 k

2. Edition

VA 6/100 H 1200 CR 51-1 0 460 306 201

Nozzle-and-holder assembly 1 688 901 020 (172 + 3 bar) Setting of the pointer at a stroke of 1 mm in

3.77 supersedes IHC company D 358 engine

relation to outlet "A".

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers Test Intructions and Test Equipment

VDT-WPP 161/4 B

Pre-stroke setting

 $0.3_{mm} \pm 0.04$

Pre-setting see reverse side

				erse side		
1. 9	Settings	rev/min	Settings		Charge-air press kp/cm ²	Difference in delivery cm ³
1 1 Te	ming device travel	900	4,1-5,1	mm ,		
1 2 Sc	upply pump pressure	900	5,8-6,3	kp/cm ²		
	ull-load delivery without harge-air pressure	800	64,0-65,0	cm ³ /1000 strokes		2,5
	ull-load delivery with charge-air ressure			cm ³ /1000 strokes		1
1 4 ld	lle speed regulation	300	12,0-18,0	cm ³ /1000 strokes		3,0
1 5 St	tart	100	mind.80,0	cm ³ /1000 strokes		
16 Ft	uli-load speed regulation	1250	36,0-44,0	cm ³ /1000 strokes		Ì

2. Test Sp	ecificatio		s in brackets			
2 1 Timing device	rev/min mm	Start 270-420(240-	450) 500	800	900	1000-1150
		0,8-1,8(0,5-	2,1) 3,4-3,6	6(3,1-3,9)	(3,8-5,4)	5,2-5,9(4,9-6,2)
2.2 Supply pump	rev/min	200			900	1200
	kp/cm²	2,4-2,9(2,2-	3,1)		(5,6-6,5)	6,9-7,4(6,7-7,6)
Overflow delivery	rev/min		500			1200
	cm ³ /10 s		55-100(40-1	10)		55-100(40-110)
23 Fuel deliveries						
Speed control lever	Delivery lever	rev/min	cm ³ /1000 strokes		Charge-air	pressure kp/cm ²
End stop	Full	1300-1350 (1280-1370) 1250	0	(25 O A5	0)	
		1210-1230	Start	(35,0-45	,0)	
		1150	66,0-69,0			
		800 500	62,5-65,5	(63,5-65 (61,5-66		
	Stop	1200	0			
Idle stop	Full	350-400 (330-420)	0			
		300		(11,0-19	,0)	
	Start	100	mind.80,0			
End stop	Viu.	220-320				·

Angle to the stop-plate	Pre-setting dimensions
Pump $\alpha = 25 \pm 4^{\circ}$ $\beta = 50 \pm 8^{\circ}$ $\gamma = 30 - 8^{\circ}$ $\delta = 60 \pm 8^{\circ}$	Pump Dimension IV = 3,6 mm Dimension V = 24,6 mm

WPP 001/4 IHC 5,1 n

2. Edition En

VA 6/100 H 1200 CR 191

Nozzle-and-holder assembly CR 191 P 1 688 901 020 (172 + 3 bar)

8.77 supersedes IHC company D 310

engine

0 460 306 214

Setting of the pointer at a stroke of 1 mm in relation to outlet "A".

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

Pre-stroke setting

 $0.4_{mm} \pm 0.02(\pm 0.04)$

Test Intructions and Test Equipment **VDT-WPP 161/4 B**

Pre-setting see reverse side

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				F1	Pre-setting see reverse side		
1.	Settings	rev/min	Settings		Charge-air press kp/cm ²	Difference in delivery cm ³	
1.1	Timing device travel	900	3,5-4,5	mm			
12	Supply pump pressure	900	5,3-5,8	kp/cm ²			
13	Full-load delivery without charge-air pressure	800	64,0-65,0	cm ³ /1000 strokes		2,5	
	Full-load delivery with charge-air			cm ³ /1000 strakes	4	İ	
1 4	pressure Idle speed regulation	450	11,0-19,0	cm ³ /1000 strokes		3,0	
15	Start	100		cm ³ /1000 strokes			
16	Full-load speed regulation	1250	27,0-33,0	cm ³ /1000 strokes			

2. Test Sp	ecificati	ONS Checking val	ues in brackets		
2.1 Timing device	rev/min	490-540(460) - 570) 600	900	920-1050
	mm	Start	0,8-1,8(0,5-2,1)	(3,2-4,8)	4,7-5,4(4,4-5,7)
2.2 Supply pump	rev/min	200		900	1200
a.e. coppi, pemp	kp/cm ²	1,5-2,0(1,3-2,2)		(5,1-6,0)	6,3-6,8(6,1-7,0)
Overflow delivery	rev/min	500			1200
Overtion delivery	cm ³ /10 s	55-100(40-	-110)		55-100(40-110)

23 Fuel deliv	eries
---------------	-------

Speed control lever	Delivery lever	rev/min	cm ³ /1000 strokes		Charge-air pressure kp/cm ²
End stop	Full	1320-1380 (1300-1400) 1250	0	(26,0-34,0)	
		1180-1210	Start		
		1150 800	60,5-63,5	(59,5-64,5) (63,5-65,5)	
		500	58,0-61,0	(57,0-62,0)	
	Stop	1200	0		
Idle stop	Full	510-560	0		
		(490-580) 450		(10,0-20,0	
	Start	100	mind.80,0		
End stop		250-380			

Angle to the stop-plate	Pre-setting dimensions
Pump $\alpha = 25 \pm 4^{\circ}$ $\beta = 45 \pm 8^{\circ}$ $\gamma = 30 - 8^{\circ}$ $\delta = 60 + 8^{\circ}$	Pump Dimension IV = 2,40 mm Dimension V = 24,65 mm

WPP 001/4 IHC 5,8 g 1 2. Edition

En

VA 6/110 H 1100 CR 180-1 . CR 180-1 P

Nozzle-and-holder assembly 1 688 901 020 (172 + 3 bar)

O 460 316 018 1 688 901 020 (Setting of the pointer at a stroke of 1 mm in relation to outlet "A".

engine DT 358 "1246"

All test specifications are valid for Rosch Fuel Injection Pump Test Benches

10.76

IHC

Pre-stroke setting

 $0,5 \text{ mm} \pm 0,02 (\pm 0,04)$

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers Test Intructions and Test Equipment VDT-WPP 161/4 B

Pre-setting see reverse side

supersedes

company

Festoil-ISO 4113

1.	Settings	rev/min	Settings	Charge-air press	Difference in delivery cm ³
1.1	Timing device travel	800	5,7-6,7 _{mm}	0	
12	Supply pump pressure	800	4,8-5,3 kp/cm²	0	
	Full-load delivery without	500	78,5-81,5 cm ³ /1000 stro	kes 0,2	
	charge-air pressure Full-load delivery with charge-air	800	85,5-86,5 cm ³ /1000 stro	kes 0,4	2,5
1.4	pressure Idle speed regulation	450	14,5-20,5 cm ³ /1000 stro		3,0
	Start	100	mind.95,0 cm ³ /1000 stro	kes 0	
	Full-load speed regulation	1180	41,0-49,0 cm ³ /1000 stro	0,4	

2. Test Sp	ecificati	ons Checking 200-350(1	values in brackets 70-380)	400	800	900-1050
2.1 Timing device	rev/min mm	Start				6,9-7,6(6,6-7,9)
2.2 Supply pump	rev/min	200			800	1100
	kp/cm²	1,3-1,8(1		((4,6-5,5)	6,0-6,4(5,8-6,6) 1100
Overflow delivery	rev/min cm ³ /10 s	55-100(4				55-100(40-110)

Speed on thollever	Delivery lever	rev/min	cm ³ /1000 strokes		Charge-air pressure kp/cm ²
End stop	Full	1210-1280	0		0,4
		(1190-1300)		(40,0-50,0)	0,4
		1100-1130 1050	Start 86,5-89,5	(85,5-90,5)	0,4
		800 500		(85,0-87,0) (77,5-82,5)	0,4 0,2
	Stop	1100	0		
Idle stop	Full	530-580 (510-600)	0		
		450		(13,5-21,5)	
End stop	Start	100 220-320	mind.95,0		

Angle to the stop plate	Pre-setting dimensions
Pump $\alpha = 25 \pm 4^{\circ}$ $\beta = 40 \pm 8^{\circ}$ Y	Pump Dimension IV = 0,6 mm Dimension V = 24,6 mm

WPP 001/4 IHC 3,5 h

2. Edition

En

VA 4/100 H 1250 CR 12-15

Nozzle-and-holder assembly 1 688 901 020 (172+3 bar)

supersedes 3.76 IHC D 206

engine

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

Test Intructions and Test Equipment

VDT-WPP 161/4 B

Pre-setting see reverse side

Pre-stroke setting

 $0.5 \, \text{mm} \pm 0.04$

Plunger lift of 1,0 mm related to outlet "A"

1.	Settings	rev/min	Settings	Charge-air press kp/cm ²	Difference in delivery cm ³
11	Timing device travel	800	4,2-5,2 mm		
12	Supply pump pressure	800 .	4,8-5,3 kp/cm ²		
1.3	Full-load delivery without charge-air pressure	800	60,5-61,5 cm ³ /1000 strokes	1	2,5
	Full-load delivery with charge-air pressure		cm ³ /1000 strokes		
14	idle speed regulation	350	16,0-22,0 cm ³ /1000 strokes	i	3,0
15	Start	100	mind.85,0 cm ³ /1000 strokes		
16	Full-load speed regulation	1330	26,0-34,0 cm ³ /1000 strokes		

2. Test Sp	ecificatio	ns Checking value	s in brackets			
2.1 Timing device	rev/min mm	Start 180-330(150- 1,1-2,1(0,8-	360) 400 2,4) (3,9-5,	800 ,5) 6,1-7,1(5,	1100 ,8-7,4)7	1130-1250 (,0-7,7(7,3-8,0)
2.2 Supply pump	rev/min kp/cm²	200	2,5)	800 (4,6-5,5)	6,6	1250 5-7,1(6,4-7,3)
Overflow delivery	rev/min cm ³ /10 s	500 55-100(40-1	10)		55	1250 5-100(40-110)
2.3 Fuel deliveries						
Speed control lever	Delivery lever	rev/min	cm ³ /1000 strokes		Charge-air p	oressure kp/cm ^{&}
End stop	Full	1360-1400 (1340-1420) :330 1280-1300 1200 800 500	0 Start 58,0-61,0 51,0-54,0	(60,0-62,0)		
Idle stop	Full	420-470 (400-490) 350	0 mind.85,0	(15,0-23,0)		
End stop	Jian	220-320				,

Testoil-ISO 4113

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Angle to the stop-plate	Pre-setting dimensions
Pump $\alpha = 25 \pm 4^{\circ}$ $\beta = 40 \pm 8^{\circ}$ $\gamma = 30 - 8^{\circ}$ $\delta = 60 + 8^{\circ}$	Pump = 2,4 mm Dimension IV = 24,5 mm Demension V

46

WPP 001/4 IHC 3,5 b 3

3. Edition

VA 4/100 H 1090 CR 84 0 460 304 180 supersedes 6.78
company IHC
engine D 206

Nozzle-and-holder assembly 1 688 901 020 (172+3 bar)

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers Test Intructions and Test Equipment

Pre-stroke setting $0.5 \text{ mm} \pm 0.02 \ (\pm 0.04)$ Plunger lift of 1.0 mm related to outlet "A"

VDT-WPP 161/4 B
Pre-setting see reverse side

1. Settings	rev/min	Settings	Charge-air press kp/cm ²	Difference in delivery cm ³
1 1 Timing device trave!	700	2,9-3,7 mm	1	
12 Supply pump pressure	700	4,8-5,3 kp/cm ²		
1.3 Full-load delivery without charge-air pressure	800	62,0-63,0 cm ³ /1000 strokes		2,5
Full-load delivery with charge-air pressure		cm ³ /1000 strokes	1	<u> </u>
1.4 Idle speed regulation	350	17,0-23,0 cm ³ /1000 strokes		3,0
15 Start 196 bar	100	mind.90,0 cm ³ /1000 strokes	ļ	
1.6 Full-load speed regulation	1125	31,0-39,0 cm ³ /1000 strokes		

2. Test Sp	ecificatio	NS Checking value	s in brackets		
2.1 Timing device	rev/min mm	220-350(190- 0,6-1,6(0,3-	·380) 400 ·1,9) (2,6-4	700 1,0)3,8-4,8(3	850 1090 ,5-5,1) 4,7-5,4(4,4-5,7)
22 Supply pump	rev/min kp/cm²	200 2,2-2,7(2,0-		700 (4,6-5,5)	1090 6,3-6,8(6,1-7,0)
Overflow delivery	rev/min cm ³ /10 s	500 55-100(40-1			1090 55-100(40-110)
23 Fuel deliveries			- 		
Speed control lever	Delivery lever	rev/min	cm ³ /1000 strokes		Charge-air pressure kp/cm ⁵
End stop	Full	1085-1215 (1065-1235) 1125 1080 800 500		(30,0-40,0) (64,5-69,5) (61,5-63,5) (53,5-58,5)	
	Stop	1090	0		
Idle stap	Full	460-520 (440-540) 350	0	(16,0-24,0)	
	Start	100 220-300	mind.90,0		

Testoil-ISO 4113

J19

BOSCH

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Angle to the stop-plate	Pre-setting dimensions	
Pump $\alpha = 25 \pm 4^{\circ}$ $\beta = 40 \pm 8^{\circ}$ $y = 30 - 8^{\circ}$ $\delta = 60 \pm 8^{\circ}$	Pump Dimension IV = 2,4 cm Dimension V = 25,0 mm	

46

WPP 001/4 JHC 5,1 c

supersedes

3. Edition

E

VA 6/100 H 1150 BR 21 0 460 306 037

Nozzle-and-holder assembly 1 688 901 020 (172 + 3 bar)

sembly company 3 bar) engine

Setting of the pointer at a stroke of 1 mm in relation to outlet "A".

Pre-stroke setting

 $0,3 \text{ mm} \pm 0,02 (\pm 0,04)$

All test specifications are valid for Bosch Fuel Injection Pump Test Benches

6.69

D 310

JHC

and Testers
Test Intructions and Test Equipment
VDT-WPP 161/4 B

Pre-setting see reverse side

Testoil-ISO 4113

			FI	e-selling see levels	se side
1. Settings	rev/min	Settings		Charge-air press kp/cm ²	Difference in delivery cm ³
1.1 Timing device travel	1100	5,9-6,9	mm		
1.2 Supply pump pressure	1100	6,9-7,4	kp/cm ²		
1.3 Full-load delivery without charge-air pressure	800	61,5-62,5	cm ³ /1000 strokes		2,5
Full-load delivery with charge-air			cm ² /1000 strokes		
pressure 1 4 Idle speed regulation	300	7,0-13,0	cm ³ /1000 strokes		3,0
15 Start (mech.) 196 bar	100	mind.90,0	cm ³ /1000 strokes		
1 6 Full-load speed regulation	1250	16,0-24,0	cm ³ /1000 strokes		

O Took S-	agificatio	20			
2. Test Sp		NS Checking value		1100	1110 1100
2.1 Timing device	rev/min	560-720 (530-		1100	1110-1180
	mm	Start	(5	,6-7,2)	6,7-7,4(6,4-7,7)
2.2 Supply pump	rev/min	100		500	1100
	kp/cm²	2,1-2,6(1,9-2	4,6-	5,1(4,4-5,3)	(6,7-7,6)
Overflow delivery	rev/min			1000	
Otomow domony	cm ³ /10 s		3	0-55(15-70)	
23 Fuel deliveries					
Speed control lever	Delivery lever	rev/min	cm ³ /1000 strokes		Charge-air pressure kp/cm ⁵
End stop	Full	1270-1320 (1250-1340) 1250 1140-1190 1130 800 500	0 Start 63,0-66,0- 58,5-61,5	(15,0-25,0) (62,0-67,0) (61,0-63,0) (57,5-62,5)	
	Stop	1150	0		
Idle stop	Full	340-390 (320-410) 300	0	(6,0-14,0)	
End stop	Start	100 500 mind.180	mind.90,0 max. 47,5		

Testoil-ISO 4113

Angle to the stop-plate	Pre-setting dimensions
Fump $\alpha = 25 \pm 4^{\circ}$ $\beta = 40 \pm 8^{\circ}$ $\gamma = 30 - 8^{\circ}$ $\delta = 60 \pm 8^{\circ}$	Pump Dimension IV - MM Dimension V - MM

Screw plug 1 463 462 017 Total length 24,0 mm

Dimension I = 7,0 mm Dimension II = 14,0 mm Dimension III = 35,8 mm Dimension IV = - mm

Screw plug 1 463 462 003 Total length 32,0 mm

Dimension I = 7,0 mm Dimension III = 7,0 mm Dimension III = 27,8 mm see BMP 161/32

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WPP 001/4 JHC 5,1 c 5

1. Edition

En

VA 6/100 H 1500 BR 20 Nozzle-and-holder assembly 0 460 306 036 1 688 901 020 (172 + 3 bar) Setting of the pointer at a stroke of 1 mm in relation to outlet "A".

supersædes 10.76 company JHC engine D 310

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers Test intructions and Test Equipment

VDT-WPP 161/4 B
Pre-setting see reverse side

Pre-stroke setting

 $0,4 \text{ mm} \pm 0,02 (\pm 0,04)$

					6.26 mild 266 Level:	70 3.00
1.	Settings	rev/min	Settings		Charge-air press kp/cm ²	Difference in delivery cm ³
1.1	Timing device travel	800	7,8-8,8	mm		
1.2	Supply pump pressure	800	5,1-5,6	kp/cm²		
1.3	Full-load delivery without charge-air pressure	1000	71,0-72,0	cm ³ /1000 strokes		2,5
	Full-load delivery with charge-air pressure		• •	cm ³ /1000 strokes		
1.4	Idle speed regulation	250	12,0-18,0	cm ³ /1000 strokes	!	3,0
1.5	sun 196 bar	100	mind.70,0	cm ³ /1000 strokes		
16	Full-load speed regulation	1560	34,5-42,5	cm ³ /1000 strokes		

-	ecificatio	NS Checking value: 1 250-400 (220)		800		1090-1240	
2.1 Timing device	rev/min		•				
	mm	Start		(7,5-9,1)	13	,7-14,4(13,4-14,7)	
2.2 Supply pump	rev/min	100		800		1500	
	kp/cm²	1,3-1,8 (1,1	-2,0)	(4,9-5,8)	7	,5-8,0 (7,3-8,2)	
Overflow delivery	rev/min	500				1500	
O10	cm ³ /10 s	mind.25,0		8		35-125(70-140)	
23 Fuel deliveries	<u> </u>	<u> </u>					
Speed control lever	Delivery lever	rev/min	cm ³ /1000 stro	kes		Charge-air pressure kp/cm ⁴	
End stop	Full	1660-1780 (1640-1800) 1690 1560 1480 1000 500	max. 5,0 34,5-42	,5 (33,5-4 ,0 (57,0-6 (70,5-7	(3,0) (2,5)		
Idle stop	Full	300-370 (280-390) 250	0	(11,0-1	9,0)		
End stop	Start	100 mind.180	mind.70	,0			

Testoil-ISO 4113

Angle to the stop-plate	Pre-setting dimensions		
Pump $\alpha = 25 \pm 4^{\circ}$ $\beta = 50 \pm 8^{\circ}$ $\gamma = 30 - 8^{\circ}$ $\delta = 60 \pm 8^{\circ}$	Pump Dimension IV = 1,0 mm Dimension V = 25,0 mm		

WPP 001/4 JHC 5,8 a 2

1. Edition

VA 6/100 H 1400 BR 19-2

Nozzle-and-holder assembly 1 688 901 020 (172 + 3 bar) supersedes

JHC

0 460 306 119

company engine

D 358/TOE

Setting of the pointer at a stroke of 1 mm in relation to outlet "A".

and Testers

All test specifications are valid for Bosch Fuel Injection Pump Test Benches

Test Intructions and Test Equipment

VDT-WPP 161/4 B

Pre-setting see reverse side

Pre-stroke setting

 ± 0.02 nm(± 0.04)

1. Set	tings	rev/min	Settings		Charge-air press kp/cm ²	Difference in delivery cm ³
1 1 Timing o	device travel	900	6,7-7,7	mm		
1.2 Supply	pump pressure	900	4,6-5,1	kp/cm ²		
	d delivery without air pressure	1200	77,0-78,0	cm ³ /1000 strokes		2,5
Full-load	d delivery with charge-air			cm ³ /1000 strokes		
pressur 1 4 Idie spe	ed regulation	350	13,0-19,0	cm ³ /1000 strokes		3,0
15 Start		100	mind.90,0	cm ³ /1000 strokes		
16 Full-loa	d speed regulation	1500	47,0-55,0	cm ³ /1000 strokes		

2. Test Sp	ecificatio	ns Checking value	s in brackets		
2.1 Timing device	rev/min	330-480 (300	3-510)	900	1250-1500
	mm	∘Start	(6,4-8,0)	11,7-12,4(11,4-12,7)
2.2 Supply pump	rev/min	100		900	1400
	kp/cm²	0,8-1,3 (0,6	5-1,5) (4,4-5,3)	6,2-6,7 (6,0-6,9)
Overflow delivery	rey/min	500			1000
Steinow delitery	cm ³ /10 s	mind. 25			55-125 (40-140)
23 Fuel deliveries	<u> </u>				
Speed control lever	Delivery lever	rev/min	cm ³ /1000 stroke	s	Charge-air pressure kp/cm ²
End stop	Full	1570-1650 (1550-1670) 1500 1370	73.5-76.5	(46,0-56,0 (72,5-77,5	0)
		1200 900 500	70,5-73,5 62,5-66,5	(76,5-78,5 (69,5-74,5 (61,5-67,5	5) 5) 5)
	Stop	1400	0		
Idle stop	Full	450-510 (430-530) 350	0	(12,9-20,0)) \
End stop	Start	100 500 mind.180	mind.90,0 30,0-62,0)

KA

Angle to the stop-plate	Pre-setting dimensions
Pump $\alpha = 25 \pm 4^{\circ}$ $\beta = 55 \pm 8^{\circ}$ $Y = 30 - 8^{\circ}$ $\delta = 60 \pm 8^{\circ}$	Pump Dimension IV = - MM Dimension V = - MM

WPP 001/4 SAM 1.0 a

1. Edition

VA 4/110 H 1100 BR 158 0 460 314 011

supersedes

Same

company engine

DA 1004

Nozzle-and-holder assembly 1 688 901 020 (172 + 3 bar)

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

Test Intructions and Test Equipment

VDT-WPP 161/4 B

Pre-setting see reverse side

Pre-stroke setting 0,5 mm Plunger lift of 1,0 mm related to outlet "A"

1.	Settings	rev/min	Settings		Charge-air press kp/cm ²	Difference in delivery cm ³
11	Timing device travel	800	5,3-6,3	mm		
12	Supply pump pressure	800	4,5-5,0	kp/cπ²		
13	Full-load delivery without charge-air pressure	800	72,0-73,0	cm ³ /1000 strokes		2,5
	Full-load delivery with charge-air pressure			cm ³ /1000 strokes		
14	Idle speed regulation	400	17,0-23,0	cm ³ /1000 strokes		3,0
15	Start	100	mind. 110	cm ³ /1000 strokes		
16	Full-load speed regulation	1150	38,5-46,5	cm ³ /1000 strokes		

2. Test Sp	ecificatio	ns Checking yalue 350-500 (32)	s in brackets	800	900-1050
2.1 Timing device		Start		(5,0-6,6)	
	mm				
2.2 Supply pump	rev/min	100		800	1100
Z.Z. Gabbiy bamb	kp/cm ²	0,5-1,0 (0,	3-1,2)	(4,3-5,2)	5,9-6,4 (5,7-6,6)
		500			1000
Overflow delivery	rev/min cm ³ /10 s	mind. 25			55-125 (40-140)
23 Fuel deliveries					
Speed control lever	Delivery lever	rev/min	cm ³ /1000 strokes		Charge-air pressure kp/cm/
End stop	Full	1220-1280 (1200-1300)	0		
		1150	38,5-46,5	(37,5-47,5) (71,0-76,0) (71,5-73,5) (67,5-72,5)	
		1050 800	/2,0-/5,0	(71,0-76,0) (71,5-73,5)	
		500	68,5-71,5	(67,5-72,5)	
	Stop	1100	0		
idle stop	Full	480-530 (460-550) 400		(16,0-24,0)	
End stop	Start	100 110-210	mind.110	, ,	
•				•	

40

Angle to the stop-plate	Pre-setting dimensions				
Pump $\alpha = 25 \pm 4^{\circ}$ $\beta = 40 \pm 8^{\circ}$ $\gamma = 30 - 8^{\circ}$ $\delta = 60 + 8^{\circ}$	Pump Dimension IV = - MM Dimension V = - MM				

46

WPP 001/4 GUL 2,3 b 1

1. Edition

En

VA 3/100 H 1000 BR 111 0 460 303 043

Nozzle-and-holder assembly 1 688 901 020 (172 + 3 bar) supersedes

company Guldner

engine

3 L 79

Setting of the pointer at a stroke of 1 mm in relation to outlet "A".

Pre-stroke setting

 $0,1 \text{ mm} \pm 0,02 (\pm 0,04)$

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers Test Intructions and Test Equipment VDT-WPP 161/4 B

Pra-catting see reverse side

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es.

			Pre-setting see reverse side				
1. Settings	rev/min	Settings		Charge-air press kp/cm ²	Difference in activery cm ³		
1.1 Timing device travel	700	4,9-5,9	mm				
1.2 Supply pump pressure	700	4,9-5,4	kp/cm ²				
1.3 Full-load delivery without charge-air pressure	700	50,0-51,0	cm ³ /1000 strokes	}	2,5		
Full-load delivery with charge-air			cm ³ /1000 strokes		1		
pressure 1.4 Idle speed regulation	250	17,0-23,0	cm ³ /1000 strokes		3,0		
1 5 Start	100	mind.110,0	cm ³ /1000 strokes				
1.6 Full-load speed regulation	1050	15,0-24,0	cm ³ /1000 strokes				

2. Test Sp	ecificatio	NS Checking value	s in brackets		
2.1 Timing device	rev/min	380-540 (350		700	840-1000
	mm	Start		(4,6-6,2)	8,7-9,4(8,4-9,7)
2.2 Supply pump	rev/min	100		700	1000
	kp/cm²	1,3-1,8 (1,1	-2,0)	(4,7-6,1)	6,0-6,5 (5,8-6,7)
Overflow delivery	rev/min	500			1000
	cm ³ /10 s	mind. 25			55-125 (40-140)
23 Fuel deliveries					
Speed control lever	Delivery lever	rev/min	cm ³ /1000 strokes		Charge-air pressure kp/cm ⁵
End stop	Full .	1050-1110 (1030-1130) 1050 930-1030 980 700 500	0 Start 54,0-57,0 42,0-45,0	(15,0-25,0 - (53,0-58,0 (49,5-51,5 (41,0-46,0	
	Stop	1000	U		
Idle stop	Full	270-320 (250-340) 250	0	(16,0-24,0)
-	Start	100	mind.110,	0	
End stop		130-230			

Angle to the stop plate	Pre-setting dimensions
Pump $\alpha = 25 \pm 4^{\circ}$ $\beta = 48 \pm 8^{\circ}$ $\gamma = 30 - 8^{\circ}$ $\delta = 60 + 8^{\circ}$	Pump Dimension IV = - mm Dimension V = - mm Dimension I = 7,0 mm Dimension II = 9,0 mm Dimension III = 30,8 mm

WFP 001/4 IHC 5,1 g 1

1. Edition

VA 6/100 H 1200 BR 51-1

0 460 306 081

Testoil-ISO 4113

supersedes

vnsamos

IHC

engine

D 358 DU

Nozzle-and-holder assembly 1 688 901 020 (172 + 3 bar)

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers Test Intructions and Test Equipment

VDT-WPP 161/4 B

Pre-setting see reverse side

Pre-stroke setting 0,3 mm Plunger lift of 1,0 mm related to outlet "A"

1. Settings	rev/min	Settings		Charge-air press kp/cm/	Difference in delivery cm ³
1.1 Timing device travel	1100	5,6-6,6	mm		
1 2 Supply pump pressure	1100	6,3-6,8	kp/cm²		
1.3 Full-load delivery without charge-air pressure	800	66,6-67,6	cm ³ /1000 strokes	İ	2,5
Full-load delivery with charge-air			cm ³ /1000 strokes		
pressure ^ 1.4 Idle speed regulation	300	12,0-18,0	cm ³ /1000 strokes		3,0
15 Start (mech.) 196 bar	100	mind.90,0	cm ³ /1000 strokes		
1.6 Full-load speed regulation	1250	41,0-49,0	cm ³ /1000 strokes		

2. Test Sp	ecificatio	NS Checking value:			
2.1 Timing device	rev/min ,	560-720 (530-	-750)	1100	1110-1210
	mm	Start	(5,	3-6,9)	6,7-7,4(6,4-7,7)
22 Supply pump	rev/min	100		1100	
	kp/cm ²	1,4-1,9 (1,2-	-2,1) (6,	0-7,1)	
Overflow delivery	rev/min	500		1000	
Overnow delivery	cm ³ /10 s	mind. 25	55-125	(40-140)	
23 Fuel deliveries	<u> </u>				
Speed control lever	Delivery lever	rev/min	cm ³ /1000 strokes		Charge-air pressure kp/cm²
End stop	Full	1320-1370 (1300-1390) 1250 1150 800 500	0 69,5-72,5 63,0-66,0	(40,0-50,0) (68,5-73,5) (66,0-68,0) (62,0-67,0)	
	Stop	1200	0		
idle stop	Full	360-410 (340-430) 300	0	(11,0-19,0)	
End stop	Start	100 500	mind. 90,0 max. 55,0		

Angle to the stop-plate	Pre-setting dimensions
Pump α = 25 ± 4° β = 40 ± 8° γ = 30 - 8° δ = 60 ± 8°	Pump = 2,0 mm Dimension IV = - mm

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WPP 001/4 IHC 3,5 n

1. Edition

VA 4/100 H 1250 BR 64 -P 0 460 304 117

supersedes

company

IHC

engine

D 209

Nozzle-and-holder assembly 1 688 901 020 (172 + 3 bar)

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers Test Intructions and Test Equipment

VDT-WPP 161/4 B

Pre-setting see reverse side

0,5 mm Pre-stroke setting Plunger lift of 1,0 mm related to outlet "A"

The sering see to the see					
1. Settings	rev/min	Settings		Charge-air press kp/cm ²	Difference in delivery cm ³
1.1 Timing device travel	800	8,8-9,8	mm		
1.2 Supply pump pressure	800	4,9-5,4	kp/cm²		
1.3 Full-load delivery without charge-air pressure	800	57,0-58,0	cm ³ /1000 strokes	Ì	
Full-load delivery with charge-air pressure			cm ³ /1000 strokes		
1.4 Idle speed regulation	350	12,0-18,0	cm ³ /1000 strokes	1	
1.5 Start	100	mind.90,0	cm ³ /1000 strokes		
1.6 Full-load speed regulation	1300	38,0-46,0	cm ³ /1000 strokes		

•		NS Checking value: 200-350 (170-		800	1050-1200
21 Timing device	rev/min	200-350 (1/0	•		, , , , , , , , , , , , , , , , , , , ,
	mm	Start	(8,	5-10,1)	13,7-14,4(13,4-14,7)
22 Supply pump	rey/min	100		800	1250
	kp/cm ²	1,3-1,8 (1,1	-2,0) (4,	7-5,6)	6,5-7,0 (6,3-7,2)
Overflow delivery	rev/min	500		1000	
CTOOH GCHTCI)	cm ³ /10 s	mind. 25	55-1	25(40-140)	
23 Fuel deliveries	<u> </u>				
Speed control lever	Delivery lever	rev/min	cm ³ /1000 strokes		Charge-air pressure kp/cm/
End stop	Full	1330-1380 (1310-1400) 1300 1200 800 500	0 58,5-61,5 48,5-51,5	(37,0-47,0 (57,5-62,5 (56,5-58,5 (47,5-52,5	
Idle stop	Full	390-440	0		
		(370-460) 350		(11,0-19,0	
	Start	100 500	mind. 90,0 30,0-50,0		
End stop		mind.180		•	

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Angle to the stop-plate	Pre-setting dimensions
Pump $\alpha = 25 \pm 4^{\circ}$ $\beta = 40 \pm 8^{\circ}$ $Y = 30 - 8^{\circ}$ $\delta = 60 \pm 8^{\circ}$	Pump Dimension IV = - MM Dimension V = - MM

WPP 001/4 GUL 3,1 a 1

1. Edition

VA 4/100 H 1250 BR 106-1 0 460 304 051

supersedes

company

Guldner 4 L 79

engine

Nozzle-and-holder assembly 1 688 901 020 (172 + 3 bar)

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers Test Intructions and Test Equipment

VDT-WPP 161/4 B

Pre-setting see reverse side

Pre-stroke setting 0,1 mm Plunger lift of 1,0 mm related to outlet "A"

1. Settings	rev/min	Settings		Charge-air press kp/cm²	Difference in delivery cm ³
1.1 Timing device travel	700	4,5-5,5	mm		
1 2 Supply pump pressure	1150	5,6-6,1	kp/cm²		
1.3 Full-load delivery without	800	54,0-55,0	cm ³ /1000 strokes		2,5
charge-air pressure Full-load delivery with charge-air			cm ³ /1000 strokes		
pressure 1 4 Idle speed regulation	250	14,0-17,0	cm ³ /1000 strokes	ļ 1	3,0
1.5 Start	100	mind.100,0	cm ³ /1000 strokes		
1 6 Full-load speed regulation	1270	16,0-24,0	cm ³ /1000 strokes		

2. Test Sp		ns Checking value 350~510 (320-	s in brackets 540)	700	990-1150
2.1 Timing device	rev/min		-		10,7-11,4(10,4-11,7)
2.2 Supply pump	rev/min kp/cm [®]	100 0,9-1,4 (0,7-	·	200	1150 (5,4-6,3)
Overflow delivery	rev/min cm ³ /10 s				1000 55-125(40-140)
2.3 Fuel deliveries					
Speed control lever	Delivery lever	rev/min	cm ³ /1000 strokes		Charge-air pressure kp/cm²
End Stop	Full	1275-1325 (1255-1345) 1270 1130 800 500	0 56,5-59,5 44,5-47,5	(15,0-25,0 (55,5-60,5 (53,5-55,5 (43,5-48,5	(1) (5) (5) (5)
	Stop	1250	0		
idle stop	Full	280-330 (260-350) 250	0	(10,0-18,0	0)
•.	Start	100	mind.100,0		
End stop		130-230		•	

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BOSCH

Angle to the stop-plate	Pre-setting dimensions
Pump = $25 \pm 4^{\circ}$ α = $40 \pm 8^{\circ}$ γ = $30 - 8^{\circ}$ δ = $60 + 8^{\circ}$	Pump Dimension IV = - mm Dimension I = 7,0mm Dimension II = 11,0mm Dimension III = 32,8mm

WPP 001/4 GUL 2,3 a 1 1. Edition

VA 3/100 H 1250 BR 105-1 0 460 303 042

1 6 Full-load speed regulation

supersedes

Guldner company 3 L 79 engine

Nozzle-and-holder assembly 1 688 901 020 (172 + 3 bar)

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

Test Intructions and Test Equipment

VDT-WPP 161/4 B

Pre-setting see reverse side

Pre-stroke setting 0,1 mm \pm 0,02 (\pm 0,04) Plunger lift of 1,0 mm related to outlet "A"

1300

1. Settings	rev/min	Settings		Charge-air press kp/cm ²	Difference in delivery cm ³
1 1 Timing device travel	700	5,5-6,5	mm	<u> </u>	
1.2 Supply pump pressure	700	4,2-4,7	kp/cm²		
1.3 Full-load delivery without	800	57,0-58,0	cm ³ /1000 strokes		2,5
charge-air pressure Full-load delivery with charge-air			cm ³ /1000 strokes		
pressure 1 4 Idle speed regulation	250	11,0-17,0	cm ³ /1000 strokes		3,0
1 5 Start	100	mind.100,0	cm ³ /1000 strokes		

16,0-24,0

cm³/1000 strokes

2. Test Sp	ecificatio	NS Checking value	s in heackets		
2. Test Sp 21 Timing device	rev/min	330-540 (300		700	1000-1130
2. many device	mm	Start	- ,	(5,2-6,8)	
22 Supply pump	rev/min	100		700	1250
,,,,,	kp/cm ²	0,9-1,4 (0,7	-1,6)	(4,0-4,9)	5,8-6,3 (5,6-6,5)
Overflow delivery	rev/min	500		1250	1250
	cm ³ /10 s	mind. 2	:5 !	55-125 (40-140))
23 Fuel deliveries	.				
Speed control lever	Delivery lever	rev/min	cm ³ /1000 strokes		Charge-air pressure kp/cm²
End stop	Full	1330-1380 (1310-1400) 1300 1130 800 500	0 60,0-63,0 47,5-50,5	(15,0-25,0) (59,0-64,0) (56,5-58,5) (46,5-51,5)	
•	Stop	1250	0		
Idle stop	Full	290-340 (270-360) 250	0	(10,0-18,0)	
-	Start	100	mind.100	,0	
End stop		120-230		•	

Angle to the stop-plate	Pre-setting dimensions
Pump $\alpha = 25 \pm 4^{\circ}$ $\beta = 55 \pm 8^{\circ}$ $\gamma = 30 - 8^{\circ}$ $\delta = 60 + 8^{\circ}$	Pump Dimension IV = 1,0 mm (see BMP 161/32) Dimension I = - mm Dimension I = 7,0 mm Dimension II = 11,0 mm Dimension III = 32,8 mm

K14

En

WPP 001/4 IHC 3,5 c

2. Edition

VA 4/100 H 1150 BR 46 0 460 304 080

supersedes 10.69 company IHC D 206 engine

Nozzle-and-holder assembly 1 688 901 020 (172 + 3 bar)

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers Test Intructions and Test Equipment

VDT-WPP 161/4 B

Pre-setting see reverse side

Pre-stroke setting 0,5 mm Plunger lift of 1,0 mm related to outlet "A"

1.	Settings	rev/min	Settings		Charge-air press kp/cm ²	Difference in delivery cm ³
1.1	Timing device travel	800	9,3-10,3	mm		
1 2	Supply pump pressure	800	5,0-5,5	kp/cm²		
1 3	Full-load delivery without charge-air pressure	800	64,0-65,0	cm ³ /1000 strokes		2,5
	Full-load delivery with charge-air pressure			cm ³ /1000 strokes		
1 4	idle speed regulation	350	17,0-23,0	cm ³ /1000 strokes		3,0
; 5	Start	100	mind. 85	cm ³ /1000 strokes		
16	Full-load speed regulation	1200	37,0-43,0	cm ³ /1000 strokes		

ecificatio	NS Checking value	es in brackets		
rev/min	250-400 (220-	-430)	800	950-1100
mm	Start	(9,0-10,6)	13,7-14,4(13,4-14,7)
iou/min	100		800	1150
kp/cm ³	1,0-1,5 (0,8-	-1,7) (4,8-5,7)	6,4-6,9 (6,2-7,1)
·	500		1000	
	mind, 25	55-	125 (40-140)	
cm-/ius				
Delivery lever	rev/min	cm ³ /1000 strokes		Charge-air pressure kp/cm ²
Full	1270-1320 (1250-1340) 1200 1100 800 500	0 67,5-69,5 56,5-59,5	(36,0-44,0) (66,5-70,5) (63,5-65,5) (55,5-60,5)	
Stop	1150	0		
Full	410-460 (390-480)	0	/44 6 6 6 5	
	350		(16,0-24,0)	1
Start	100 500 mind. 150	mind. 85 34,0-45,0	(33,0-46,0)	·
	rev/min kp/cm² rev/min cm³/10 s Delivery lever Full Stop	Start	250-400 (220-430)	Pelivery lever Pev/min Com ³ /1000 strokes Full

K15

BOSCH

Angle to the stop-plate	Pre-setting dimensions
Pump $\alpha = 25 \pm 4^{\circ}$ $\beta = 35 \pm 8^{\circ}$ $Y = 30 - 8^{\circ}$ $\delta = 60 \pm 8^{\circ}$	Pump Dimension IV = 2,0 mm BMP 161/32 Dimension V = - mm

WPP 001/4 IHC 3,9 a 4

2. Edition

VA 4/100 H 1100 BR 12-2 0 460 304 079

Nozzle-and-holder assembly 1 688 901 020 (172 + 3 bar) supersedes company

engine

5.77 IHC D 239-544 CD

Setting of the pointer at a stroke of 1 mm in

relation to outlet "A".

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

Test Intructions and Test Equipment

VDT-WPP 161/4 B

Pre-stroke setting

 $0.5 \text{ mm} \pm 0.02 (\pm 0.04)$

Pre-setting see reverse side

				e setting see revers	70 3.00
1. Settings	rev/min	Settings		Charge-air press kp/cm ²	Difference in delivery cm ²
1.1 Timing device travel	700	9,0-10,0	тт		
1.2 Supply pump pressure	700	4,7-5,2	kp/cm ²		
1.3 Full-load delivery without charge-air pressure	800	61,5-62,5	cm ³ /1000 strokes		2,5
Full-load delivery with charge-air pressure			cm ³ /1000 strokes		
1.4 Idle speed regulation	350	12,0-18,0	cm ³ /1000 strokes	j	3,0
1.5 Start	100	mind.100	cm ³ /1000 strokes		
1.6 Full-load speed regulation	1150	36,5-44,5	cm ³ /1000 strokes		

2. Test Sp	ecificatio	NS Checking value	e in brackets		
2. Test op 2.1 Timing device	revimin	150-300 (120	-330)	700	930-1080
	mm	Start		(8,7-10,3) 700	13,7-14,4(13,4-14,7)
2.2 Supply pump	rev/min	100	100		1100
z.z copp.ypop	kp/cm ²	1,2-1,7 (1,0	-1,9)	(4,5-5,4)	6,1-6,6 (5,9-6,8)
		500			1000
Overflow delivery	rev/min cm ³ /10 s	mind.25			55-125 (40-140)
2.3 Fuel deliveries					
Speed control lever	Delivery lever	rev/min	cm ³ /1000 strokes		Charge-air pressure kp/cm ⁶
End stop	Fuil	1200-1250 (1180-1270) 1150 1100 800 500	0 61,5-64,5 56,5-59,5	(35,5-45,5) (60,5-65,5) (61,0-62,0) (55,5-60,5)	
	Stop	1100	0		•
idie stop	Full	370-450 (340-480) 350	0	(11,0-19,0)	
<u></u>	Start	100 500	mind.100 35,0-50,0		
End stop		mind.180	1		<u> </u>

Angle to the stop-plate	Pre-setting dimensions
Pump $\alpha = 25 \pm 4^{\circ}$ $\beta = 40 \pm 8^{\circ}$ $\gamma = 30 - 8^{\circ}$ $\delta = 60 \pm 8^{\circ}$	Pump Dimension IV = 0,5 mm Dimension V = - mm Dimension I = 7,0 mm Dimension II = 14,0 mm Dimension III = 35,8 mm

WPP 001/4 IHC 3,9 a 3

2. Edition

En

VA 4/100 H 1200 BR 12-1 BR 12-9

0 460 304 078 0 460 304 159

5.77 IHC

Setting of the pointer at a stroke of 1 mm in

company engine

supersedes

D 239-544 HS

relation to outlet "A". Nozzle-and-holder assembly

All test specifications are valid for Bosch Fuel Injection Pump Test Benches

1 688 901 020 (172 + 3 bar)

and Testers Test Intructions and Test Equipment

VDT-WPP 161/4 B

 $0.5 \text{ mm} \pm 0.02 (\pm 0.04)$

Pre-setting see reverse side

1.	Settings	rev/min	Settings		Charge-air press kp/cm ²	Difference in delivery cm ³
1.1	Timing device travel	700	8,7-9,7	mm .		
12	Supply pump pressure	700	4,5-5,0	kp/cm ²		
1.3	Full-load delivery without charge-air pressure	800	69,5-70,5	cm ³ /1000 strokes	•	2,5
	Full-load delivery with charge-air pressure			cm ³ /1000 strokes		
14	Idle speed regulation	350	17,0-23,0	cm ³ /1000 strokes		3,0
1.5	Start	100	mind.100,0	cm ³ /1000 strokes		
16	Full-load speed regulation	1240	41,0-49,0	cm ³ /1000 strokes		

2. Test Sp	ecificatio	ns Checking value 200-350 (170	es in brackets	700	000 1120
2.1 Timing device	rev/min	200-350 (170	-380)	700	980-1130
	mm	Start		(8,4-10,0)	13,7-14,4(13,4-14,7)
2.2 Supply pump	rev/min	100		700	1200
2.2 Supply pump	kp/cm²	1,2-1,7 (1,0	-1,9)	(4,3-5,2)	6,5-7,0 (6,3-7,2)
		500			1200
Overflow delivery	rev/min cm ³ /10 s	mind.25			55-125(40-140)
23 Fuel deliveries					
Speed control lever	Delivery lever	rev/min	cm ³ /1000 strok	es	Charge-air pressure kp/cm ⁵
End stop	Full	1260-1310 (1240-1330) 1240 1150 800 500	0 71,0-73, 66,0-69,	(40,0-50,0 ,0 (70,0-74,0 (69,0-71,0 ,0 (65,0-70,0))))
	Stop	1200	0		•
Idle stop	Full	430-500 (410-520) 350	0	(16,0-24,	0)
End stop	Start	100 mind. 180	mind.100)	

MAS BOSCH

Angle to the stop-plate	Pre-setting dimensions
Pump $\alpha = 25 \pm 4^{\circ}$ $\beta = 40 \pm 8^{\circ}$ $\gamma = 30 - 8^{\circ}$ $\delta = 60 \pm 8^{\circ}$	Pump Dimension IV = 0,5 IM Dimension V = - mm Dimension I = 7,0 mm Dimension II = 14,0 mm Dimensior. III = 35,8 mm

Test Specifications Distributor-Type Fuel Injection Pump^{2. Edition}

WPP 001/4 IHC 3,9 c

VA 4/100 H 1250 BR 67

0 460 304 121

6.70 supersedes IHC company D 239 engine

Nozzle-and-holder assembly 1 688 901 020 (172 + 3 bar)

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

Test Intructions and Test Equipment **VDT-WPP 161/4 B**

Pre-setting see reverse side

Pre-stroke setting

0,5 mm

Plunger lift of 1,0 mm related to outlet "A"

1	. Settings	rev/min	Settings		Charge-air press kp/cm ²	Difference in delivery cm ³
,	1 Timing device travel	800	8,8-9,8	mm		٠
1.	2 Supply pump pressure	800	4,9-5,4	kp/cm ²		
,	3 Full-load delivery without charge-air pressure	800	67,5-68,5	cm ³ /1000 strokes	l	2,5
	Full-load delivery with charge-air pressure			cm ³ /1000 strokes		
,	4 Idle speed regulation	350	12,0-18,0	cm ³ /1000 strokes	İ	3,0
١,	s Start (mech.) 196 bar	100	mind.90,0	cm ³ /1000 strokes		
۱ ا	6 Full-load speed regulation	1330	28,5-36,5	cm ³ /1000 strokes		

2. Test Sp 21 Timing device	ecificatio rev/min	NS Checking value 200-350 (170	s in brackets 1–380) 800	1050-1200
	mm	Start	(8,5-10,1)	13,7-14,4(13,4-14,7)
22 Supply pump	rev/min	1,3-1,8(1,1-	800 (4,7-5,6)	1250 6,5-7,0(6,3-7,2)
3 Overflow delivery	rev/min cm ³ /10 s	500 mind.25	1000 55-125(40-140)	
23 Fuel deliveries				
Speed control lever	Delivery lever	rev/min	cm ³ /1000 strokes	Charge-air pressure kp/cm²
End stop	Full	1350-1400 (1330-1420) 1330 1200 800 500	0 (27,5-37,5) 63,0-66,0(62,0-67,0) (67,0-69,0) 64,5-67,5(63,5-68,5)	•
•	Stop	1250	0	
Idle stop	Full	390-440 (370-460) 350	0 (11,0-19,0)	
End stop	Start	100 500 mind.180	mind.90,0 max. 35,0-60,0	·

Geschaltsbereich KH. Kundendienst. Kfz-Ausrustung

4. 1980 by Robert Bosch GmbH, Postfach 50, D-7000 Stuttgart 1. Printed in the Federal Republic of Germany Imprimé en République Fédérale d'Allemagne par Robert Bosch GmbH

Angle to the stop plate	Pre-setting dimensions	
Pump $\alpha = 25 \pm 4^{\circ}$ $\beta = 40 \pm 8^{\circ}$ $\gamma = 30 - 8^{\circ}$ $\delta = 60 \pm 8^{\circ}$	Pump Dimension IV = 0,5 mm Dimension V = - mm	

WPP 001/4 IHC 3,5 m

1. Edition

VA 4/100 H 1250 BR 64-1 0 460 304 119

supersedes

company

IHC D 209

engine

Nozzle-and-holder assembly 1 688 901 020 (172 + 3 bar)

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

Test Intructions and Test Equipment

VDT-WPP 161/4 B

Pre-setting see reverse side

Pre-stroke setting 0,5 mm Plunger lift of 1,0 mm related to outlet "A"

	C Setting Sea Feet				
1. Settings	rev/min	Settings		Charge-air press kp/cm	Difference in delivery cm ³
1.1 Tirning device travel	800	8,8-9,8	mm		
1.2 Supply pump pressure	800	4,9-5,4	kp/cm²		
1.3 Full-load delivery without charge-air pressure	800	52,5-53,5	cm ³ /1000 strokes	1	
Full-load delivery with charge-air			cm ³ /1000 strokes		
pressure 1 4 Idle speed regulation	350	12,0-18,0	cm ³ /1000 strokes		
1 5 Start	100	mind.90,0	cm ³ /1000 strokes		
16 Full-load speed regulation	1300	32,0-38,0	cm ³ /1000 strokes		

2. Test Sp	ecificatio	NS Checking value	s in brackets		
2 1 Timing device	rev/min	200-350(170-	380)	800	1050-1200
	mm	Start		(8,5-10,1)	13,7-14,4(13,4-14,7)
2.2 Supply pump	rev/min	100		800	1250
L. z. ooppi, pump	kp/cm [®]	1,3-1,8(1,1-	2,0)	(4,7-5,6)	6,5-7,0(6,3-7,2)
Overflow delivery	rev/min	500		1000	
Overnow delivery	cm ³ /10 s	mind. 25	55 -	125(40-140)	
23 Fuel deliveries					
Speed control lever	Delivery lever	rev/min	cm ³ /1000 stroke	\$	Charge-air pressure kp/cm/
End stop	Full	1320-1370 (1300-1390) 1300 1200 800 500	0 48,5-51,5 46,0-49,0	(31,0-39, (47,5-52, (52,0-54,) (45,0-50,	0) 5) 0) 0)
Idle stop	Full	390-440 (370-460) 350	0	(11,0-19,	0)
End stop	Start	100 500 mind-180	mind.90,0 30,0-45,0		.0)

Angle to the stop-plate	Pre-setting dimensions
Pump $\alpha = 25 \pm 4^{\circ}$ $\beta = 40 \pm 8^{\circ}$ $\gamma = 30 - 8^{\circ}$ $\delta = 60 \pm 8^{\circ}$	Pump Dimension IV = - mm Dimension V = - mm

 $0.3 \text{ mm} \pm 0.02 (\pm 0.04)$

WPP 001/4 DEE 2,5 i 1. Edition

VA 3/100 H 1250 BR 26-1 0 460 303 050

Pre-stroke setting

supersedes

John Deere company

engine

44 B

Nozzle-and-holder assembly 1 688 901 020 (172 + 3 bar)

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers Test Intructions and Test Equipment

VDT-WPP 161/4 B

		Pre-setting see reverse side			
rev/min	Settings	,	Charge-air press	Difference in delivery cm ³	
800	7,8-8,8	mm			
800	5,0-5,5	kp/cm ²			
1100	70,0-71,0			2,5	
		cm ³ /1000 strokes			
400	9,0-15,0	cm ³ /1000 strokes		3,0	
		cm ³ /1000 strokes			
1300	38,0-46,0	cm ³ /1000 strokes			
	800 800 1100 400	800 7,8-8,8 800 5,0-5,5 1100 70,0-71,0 400 9,0-15,0 	Settings Settings	Rev/min Settings Charge-air press kp/cm² Rev/min Rev/m	

2. Test Sp	ecificatio	NS Checking value			
2.1 Timing device	rev/min	160-330 (130	-360)	800	1030-1180
	mm	Start		(7,5-9,1)	12,2-12,9(11,9-13,2)
22 Supply pump	rev/min	100		800	1250
	kp/cm ²	1,3-1,8(1,1-	2,0)	(4,8-5,7)	7,0-7,5(6,8-7,7)
Overflow delivery	rev/min	500		1000	
	cm ³ /10 s	mind. 27	,	55-125(40-14	10)
23 Fuel deliveries	· · · · · · · · · · · · · · · · · · ·				
Speed control lever	Delivery lever	rev/min	cm ³ /1000 stroke	?S	Charge-air pressure kp/cm ²
End stop	Full	1360-1460 (1340-1480) 1400 1300 1200 1100 500 100	0 max.5,0 68,0-71,0 58,0-62,0 mind.45,5	(69,5-71) (57,0-63)	,0) ,5)
Idle stop	Full	520-580 (500-600) 400	0	(8,0-10,0	0)
End stop	Start			•	

Angle to the stop-plate	Pre-setting dimensions
Pump $\alpha = 25 \pm 4^{\circ}$ $\beta = 44 \pm 8^{\circ}$ $\gamma = 30 - 8^{\circ}$ $\delta = 60 \pm 8^{\circ}$	Pump Dimension IV Dimension V = - mm Dimension I = 7,0 mm Dimension II = 12,0 mm Dimension III = 28,3 mm

46

WPP 001/4 DEE 2,5 h

1. Edition

Ein

VA 3/100 H 1250 BR 26 0 460 303 034

Pre-stroke setting

supersedes

company

engine

John Deere 152 D 27 D

Nozzle-and-holder assembly 1 688 901 020 (172 + 3 bar)

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

Test Intructions and Test Equipment VDT-WPP 161/4 B

Pre-setting see reverse side

688 901 020 (1/2 + 3 bar

Lie. Setting see Levelse side					se side
1. Settings	rev/min	Settings		Charge-air press kp/cm ⁷	Difference in delivery cm ³
1 1 Timing device travel	800	7,8-8,8	mm		
1 2 Supply pump pressure	800	5,0-5,5	kp/cm²		
1.3 Full-load delivery without charge-air pressure	1150	64,0-66,0	cm ³ /1000 strokes		2,5
Full-load delivery with charge-air pressure			cm ³ /1000 strokes		†
1 4 Idle speed regulation	400	9,0-15,0	cm ³ /1000 strokes		3,0
1 5 Start			cm ³ /1000 strokes		
1 6 Full-load speed regulation	1310	31,0-39,0	cm ³ /1000 strokes		

2. Test Sp					
2.1 Timing device	rev/min	160-330(130-	360)	800	1030-1180
	mm	Start	(7	,5-9,1)	11,7-12,4(11,4-12,7)
2 2 Supply pump	rev/min	100		800	1250
	kp/cm ³	1,3-1,8(1,1-	2,0) (4	,8-5,7)	7,0-7,5(6,8-7,7)
Overflow delivery	rev/min	500		1000	
,	cm ³ /10 s	mind.25	55-	125(40-140)	
23 Fuel deliveries					
Speed control lever	Delivery lever	rev/min	cm ³ /1000 strokes		Charge-air pressure kp/cm'
End stop	Full	1340-1430 (1320-1450) 1380 1310	0 max.6,0	(30,0-40,0	
		1230 1230 1150 800 100	59,0-61,0 58,0-62,0 mind.38,0)
	Stop	1250	0		
idle stop	Full	520-580 (500-600) 400	0	(8,0-16,0)	
End stop	Start				

| Testoil-1SO 4113

BOSCH

Angle to the stop-plate	Pre-setting dimensions
Pump $a = 25 \pm 4^{\circ}$ $b = 50 \pm 8^{\circ}$ $b = 30 - 8^{\circ}$ $b = 60 \pm 8^{\circ}$	Pump Dimension IV = 2,5 mm Dimension V = - mm Dimension I = 7,0 mm Dimension II = 12,0 mm Dimension III = 28,3 mm

46

WPP 001/4 IHC 5,1 d 2

1. Edition

VA 6/100 H 1200 BR 44-1 0 460 306 105 supersedes IHC

engine D 310

Nozzle-and-holder assembly 1 688 901 020 (172 + 3 bar)

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers Test Intructions and Test Equipment

VDT-WPP 161/4 B

Pre-setting see reverse side

Pre-stroke setting 0,3 mm Plunger lift of 1,0 mm related to outlet "A"

1. Settings	rev/min	Settings		Charge-air press kp/cm ²	Difference in delivery cm ³
1.1 Timing device travel	900	4,8-5,8	mm		
1.2 Supply pump pressure	900	6,0-6,5	kp/cm²		
1.3 Full-load delivery without	800	60,0-61,0	cm ³ /1000 strokes		2,5
charge-air pressure Full-load delivery with charge-air			cm ³ /1000 strokes		
pressure 1.4 Idle speed regulation	500	9,5-15,5	cm ³ /1000 strokes	4	3,0
1.5 Start	100	mind.95,0	cm ³ /1000 strokes		
1.6 Full-load speed regulation	1300	22,0-28,0	cm ³ /1000 strokes		

2. Test Sp	ecificatio	NS Checking value	s in brackets		
2.1 Timing device	rev/min	500-650 (470	-680)	900	
	mm	Start		(4,5-6,1)	
22 Supply pump	rev/min	100		900	1200
a a copp., pap	kp/cm ²	1,8-2,3(1,6-	2,5)	(5,8-6,7)	7,0-7,5(6,8-7,7)
				1000	
Overflow delivery	rev/min cm ³ /10 s		55	5-125(40-140)	
23 Fuel deliveries			•		
Speed control lever	Delivery lever	rev/min	cm ³ /1000 strokes		Charge-air pressure kp/cm ²
End stop	Full	1330-1380 (1310-1400) 1300	0	(21 0-20 0)	
		1180	63,0-66,0	(21,0-29,0) (62,0-67,0) (59,0-61,5)	
		500	55,5-58,5	(54,5-59,5)	
		1200	0		
	Stop				
Idle stop	Full	530-580	0		
		(510-600) 500		(8,5-16,5)	
End stop	Start	100 500 mind 150	mind.95,0 max. 30,0		

15

Angle to the stop-plate	Pre-setting dimensions	
Pump $\alpha = 25 \pm 4^{\circ}$ $\beta = 40 \pm 8^{\circ}$ $\gamma = 30 - 8^{\circ}$ $\delta = 60 + 8^{\circ}$	Pump Dimension IV = 2,5 mm Dimension V = - mm	

WPP 001/4 IHC 2,4 a 4

1. Edition

VA 3/100 H 950 BR 43 0 460 303 040 BR 43-1 0 460 303 115 supersedes

IHC company D 155

engine

Nozzle and-holder assembly 1 688 901 020 (172 + 3 bar)

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers Test Intructions and Test Equipment VDT-WPP 161/4 B

Pre-setting see reverse side

 $0.3 \text{ mm} \pm 0.02(\pm 0.04)$ Pre-stroke setting Plunger lift of 1,0 mm related to outlet "A"

Difference in delivery Charge-air press rev/min 1. Settings 500 7,3-8,3 1.1 Timing device travel 5.0-5.5 kp/cm² 500 1 2 Supply pump pressure cm³/1000 strokes 700 55,5-56,5 2,5 1.3 Full-load delivery without charge-air pressure cm3/1000 strokes Full-load delivery with charge-air pressure 400 15,0-21,0 cm³/1000 strokes 3,0 1.4 Idle speed regulation 100 mind.90,0 cm³/1000 strokes 15 Start 196 bar 1000 18,5-26,5 cm3/1000 strokes 1.6 Full-load speed regulation

2. Test Sp	ecificatio	NS Checking value	s in brackets		
2.1 Timing device	rev/min	120-270(90-3	00)	500	740-900
	mm	Start	(7,0-8,6)	12,7-13,4(12,4-13,7)
2.2 Supply pump	rev/min	100		500	950
	kp/cm ²	1,8-2,3(1,6-	2,5) (4,8-5,7)	6,9-7,4(6,7-7,6)
Overflow delivery	rev/min	500		950	1000
	cm ³ /10 s	mind.27,	0 55	-125(40-135)	55-125(40-135)
23 Fuel deliveries					
Speed control lever	Delivery lever	rev/min	cm ³ /1000 strokes		Charge-air pressure kp/cm/
End stop	Full	1010-1060 (990-1080) 1000 900 700 500	0 57,5-60,5 50,0-54,0	(17,5-27,5) (56,5-61,5) (55,0-57,0) (49,0-55,0)	
	Stop	950	0		
Idle stop	Full	460-510 (440-530)	0		
	Start	400 500 100 500	35,0-45,0 mind. 90,0 35,0-45,0		
End stop		mind.150,0		•	

Angle to the stop-plate	Pre-setting dimensions
Pump $\alpha = 25 \pm 4^{\circ}$ $\beta = 37 \pm 8^{\circ}$ $Y = 30 - 8^{\circ}$ $\delta = 60 \pm 8^{\circ}$	Pump Dimerision IV = 2,0 mm Dimension V = - mm
	Ç,

WPP 001/4 IHC 5,1 b

VA 6/100 H 1100 BR 37 0 460 306 039

2. Test Specifications

12.70 supersedes IHC company D 310 engine

Nozzle-and-holder assembly 1 688 901 020 (172 + 3 bar)

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers Test Intructions and Test Equipment VDT-WPP 161/4 B

Pre-stroke setting 0,3 mm Plunger lift of 1,0 mm related to outlet "A" Pre-stroke setting

Pre-setting see reverse side

1. Settings	rev/min	Settings		Charge-air press kp/cm ²	Difference in delivery cm ³
1.1 Timing device travel	700	5,5-6,5	mm		
1 2 Supply pump pressure	700	5,5-6,0	kp/cm²		
1.3 Full-load delivery without charge-air pressure	800	62,5-63,5	cm ³ /1000 strokes		2,5
Full-load delivery with charge-air			cm ³ /1000 strokes	İ	1
pressure 1 4 Idle speed regulation	250	30,0-36,0	cm ³ /1000 strokes		3,0
1 5 Start	100	mind.95,0	cm ³ /1000 strokes		
1 6 Full-load speed regulation	1150	36,0-44,0	cm ³ /1000 strokes		

Z. Test Sp	ecilication	Checking value				
_	rev/min	260-420(230-	450)	700		920-1080
	mm	Start	(5,2-6,8)	9,7	-10,4(9,4-10,7)
2.2 Supply pump	rev/min	100		700		1100
2.2 Supply pump	kp/cm [®]	1,2-1,7(1,0-	1,9) (5,3-6,2)	6.0	-7,4(6,7-7,6)
		500		1000		
Overflow delivery	rev/min	mind.25	55_12	25(40-140)		
	cm ³ /10 s	mind.25		.5(40-1407		
2.3 Fuel deliveries						
Speed control lever	Delivery lever	rev/min	cm ³ /1000 strokes			Charge-air pressure kp/cm²
End stop	Full	1200-1250 (1180-1270) 1150	0	(35,0-4	5 N)	
		1050	65,0-68,0	(64,0-69	9,0)	
		800 500	60,0-63,0	(59,0-64	4,U) 4,0)	
				(03 60 0	.,,,	
	Stop	1100	0			
idle stop	Full	370-420	0			
		(350-440) 250		(29,0-3	7,0)	
••	Start	100	mind.95,0			
End stop		500 mind.150	max. 45,0			
2 20p	ı	1	1	•		l .

Angle to the stop-plate	Pre-setting dimensions
Pump $\alpha = 25 \pm 4^{\circ}$ $\beta = 40 \pm 8^{\circ}$ $\gamma = 30 - 8^{\circ}$ $\delta = 60 \pm 8^{\circ}$	Pump = 5,5 mm Dimension IV = - mm Dimension V

WPP 001/4 IHC 5,8 b 2

1. Edition

VA 6/100 H 1125 BR 36-1 0 460 306 123 supersedes

company

IHC

engine

D 358

Nozzle-and-holder assembly 1 688 901 020 (172 + 3 bar)

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers Test Intructions and Test Equipment

VDT-WPP 161/4 B

VUI-WPP 161/4 B

VDT-W

Pre-stroke setting 0,3 mm Plunger lift of 1,0 mm related to outlet "A"

Pre-setting see reverse side

Festoil-ISO 4113

					e setting sectorers	
1.	Settings	rev/min	Settings		Charge air press kp/cm²	Difference in delivery cm ³
11	Timing device travel	700	5,3-6,3	mm		
1.2	Supply pump pressure	700	5,4-5,9	kp/cm²		
	Full-load delivery without charge-air pressure	800	70,0-71,0	cm ³ /1000 strokes	!	2,5
	Full-load delivery with charge-air			cm ³ /1000 strokes	[i
	pressure idle speed regulation	250	17,0-23,0	cm ³ /1000 strokes		3,0
15	Start	100	mind.90,0	cm ³ /1000 strokes		
16	Full-load speed regulation	1225	26,0-34,0	cm ³ /1000 strokes		

2. Test Sp	ecificatio	15 Checking value			
2 1 Timing device	rev/min	350-500(320-	530)	700	940-1100
	mm	Start		(5,0-6,6)	9,7-10,4(9,4-10,7)
2.2 Supply pump	rev/min	100		700	1125
7/	kp/cm ²	1,1-1,6(0,9-	1,8)	(5,2-6,1)	6,9-7,4(6,7-7,6)
Overflow delivery	rev/min	500		1000	
,	cm ³ /10 s	mind. 25	55	-125(40-140)	
23 Fuel deliveries					
Speed control lever	Delivery lever	rev/min	cm ³ /1000 strokes	ę,	Charge-air pressure kp/cm²
End stop	Full	1295-1350 (1275-1370) 1225 800 800 500	0 71,0-74,0 65,0-68,0	(25,0-35,0) (70,0-75,0) (69,5-71,5) (64,0-69,0)	
	Stop	1125	0		
Idle stop	Full	370-450 (350-470) 250	0	(16,0-24,0)	
~ End stop	Start	100 500 mind.150	mind.90,0 30,0-70,0	(29,0-71,0)	

L11

Testoil-ISO 4113

Angle to the stop-plate	Pre-setting dimensions	
$ \frac{Pump}{\alpha} = 25 \pm 4^{\circ} $ $ \beta = 30 \pm 8^{\circ} $ $ \gamma = 30 - 8^{\circ} $ $ \delta = 60 \pm 8^{\circ} $	Pump Dimension IV = 3,6 mm Dimension V = 24,6 mm	

L12

WPP 001/4 DEE 2,5 f

3. Edition

VA 3/100 H 1200 ER 29

Nozzle-and-holder assembly 1 688 901 020 (172 + 3 bar) supersedes 12.71 John Deere company X 21

0 460 303 036 Adjustment of the pointer at plunger stroke 1.72 mm, related to outlet "A", corresponds to TDC position of relevant cylinder.

All test specifications are valid for Bosch Fuel Injection Pump Test Benches Test Intructions and Test Equipment

VDT-WPP 161/4 B

Pre-stroke setting

0.3 mm

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			Pr	Pre-setting see reverse side				
1. Settings	rev/min	Settings		Charge-air press kp/cm ²	Difference in delivery cm ³			
1.1 Timing device travel	700	6,3-7,3	mm					
1.2 Supply pump pressure	700	4,3-4,8	kp/cm ²					
1 3 Full-load delivery without charge-air pressure	1100	61,0-62,0	cm ³ /1000 strokes		2,5			
Full-load delivery with charge-air pressure			cm ³ /1000 strokes					
1.4 Idle speed regulation	400	9,0-15,0	cm ³ /1000 strokes		3,0			
1 5 Start			cm ³ /1000 strokes					
1.6 Full-load speed regulation	1260	26,0-34,0	cm ³ /1000 strakes					

2. Test Sport 2 1 Timing device 2 2 Supply pump Overflow delivery	rev/min mm rev/min kp/cm² rev/min cm³/10 s	Start 100	-2,4)	700	6,	1050-1200 7-12,4(11,4-12,7) 1200 0-6,5(5,8-6,7)
23 Fuel deliveries Speed control lever	Delivery lever	геу/тіп	cm ³ /1000 stro	okes		Charge-air pressure kp/cm ²
End stop	Full	1330-1370 (1310-1390) 1320 1260 1180 1100 700 100	0 max. 5, 57,5-59 54,0-57 mind.35	(25,0. 9,5 (56,5. (60,5. 7,0 (53,0.	-35,0) -60,5) -62,5) -58,0)	
idle stop	Full	520-580 (500-600) 400	0	(8,0-	16,0)	
End stop	Start		~~			·

Testoil-ISO 4113

Angle to the stop-plate	Pre-setting dimensions
Pump $\alpha = 25 \pm 4^{\circ}$ $\beta = 40 \pm 8^{\circ}$ $\gamma = 30 - 8^{\circ}$ $\delta = 60 \pm 8^{\circ}$	Pump Dimension IV = mm Dimension I = 7,0mm Dimension II = 12,0mm Dimension III = 28,3mm

L14

En

WPP 001/4 IHC 3,9 b 2

1. Edition

VA 4/100 H 1050 BR 12-5

Nozzle-and-holder assembly 1 688 901 020 (172+3 bar)

supersedes IHC company

0 460 304 109

Setting of the pointer at a stroke of 1 mm in

engine D 206 charger 100

relation to outlet "A".

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers Test Intructions' and Test Equipment

VDT-WPP 161/4 B

Pre-strake setting

 $0.5_{mm} \pm 0.02 (\pm 0.04)$

Pre-setting see reverse side

					C Sciling Secretary	
1.	Settings	rev/min	Settings		Charge-air press kp/cm ²	Difference in delivery cm ³
1.1	Timing device travel	600	5,3-6,3	mm		
12	Supply pump pressure	600	4,1-4,6	kp/cm ²		
	Full-load delivery without	900	61,5-62,5	cm ³ /1000 strokes		2,5
	charge-air pressure Full-load delivery with charge-air			cm ³ /1000 strokes		
, 4	pressure Idle speed regulation	350	12,0-18,0	cm ³ /1000 strokes		3,0
	i Start	100	mind.90,0	cm ³ /1000 strokes		
	Full-load speed regulation	1100	19,0-27,0	cm ³ /1009 strokes		

2. Test Sp	ecificatio	NS Checking value	s in brackets			
2.1 Timing device	rev/min	250-400(220-	430)	600		810-930
	mm	Start	(5,0-6,6)	9,	,7-10,4(9,4-10,7)
2.2 Supply pump	rev/min	100		600		1050
	kp/cm²	1,1-1,6(0,9-	1,8) ((3,9-4,8)	5,	,9-6,4(5,7-6,6)
Overflow delivery	rev/min	500				1050
oremon delivery	cm ³ /10 s	mind. 2	25	,	55	5-125(40-140
23 Fuel deliveries	1					,
Speed control lever	Delivery lever	rev/min	cm ³ /1000 strokes			Charge-air pressure kp/cm ²
End stop	Full	1110-1160 (1090-1180) 1100 1000 900 500	0 61,0-63,0 59,5-62,5	(61,0-63)	,0) ,0)	
	Stop	1050	0			
Idle stop	Full	390-440 (370-460) 350	0	(11,0-19	,0)	
 End stop	Start	100 500 mind. 150	mind. 90,0 35,0-60,	0 (34,0-61	,0	

Angle to the stop-plate	Pre-setting dimensions
Pump $\alpha = 25 \pm 4^{\circ}$ $\beta = 40 \pm 8^{\circ}$ $\gamma = 30 - 8^{\circ}$ $\delta = 60 \pm 8^{\circ}$	Pump Dimension IV = mm Dimension V = mm

WPP 001/4 IHC 3,9 a 5

2. Edition

VA 4/100 H 1050 BR 12-4

Nozzle-and-holder assembly 1 688 901 020 (172 + 3 bar)

5.77 supersedes

0 460 304 104

IHC company D 239 charger 125

Setting of the pointer at a stroke of 1 mm in relation to outlet "A".

Test Specifications

engine

Pre-stroke setting

 $0.5 \text{ mm} \pm 0.02(\pm 0.04)$

All test specifications are valid for Bosch Fuel Injection Pump Test Banches and Testers Test Intructions and Test Equipment

VDT-WPP 161/4 B

Pre-setting see reverse side

1. Settings	rev/min	Settings		Charge-air press kp/cm ²	Difference in delivery cm ³
1 1 Timing device travel	700	6,5-7,5	mm		
1.2 Supply pump pressure	700	4,8-5,3	kp/cm ²		
1.3 Full-load delivery without	800	71,5-72,5	cm ³ /1000 strokes		2,5
charge-air pressure Full-load delivery with charge-air			cm ³ /1000 strokes		
pressure 1 4 Idle speed regulation	350	15,0-21,0	cm ³ /1000 strokes	1	3,0
1 5 Start	100	mind.85,0	cm ³ /1000 strokes		
1.6 Full-load speed regulation	1130	28,0-36,0	cm ³ /1000 strokes		

2.1 Timing device 2.2 Supply pump	rev/min mm rev/min kp/cm² rev/min	S Checking value 250-400(220- Start 100 1,4-1,9(1,2- 500	-430) (6,2	700	840-990 9,7-10,4(9,4-10,7) 1050 5,1-6,6(5,9-6,8) 1000
Overflow delivery	cm ³ /10 s	mind. 2	5	55-125(40-140)	
2.3 Fuel deliveries					
Speed control lever	Delivery lever	rev/min	cm ³ /1000 strokes		Charge-air pressure kp/cm ⁻⁶
End stop	Full	1160-1220 (1140-1240) 1130 1030 800 500	0 69,5-72,5 69,5-72,4	(27,0-37,0) (68,5-73,5) (71,0-73,0) (68,5-73,5)	
	Stop	1050	0		
idle stop	Full	370-430 (350-450) 350	0	(14,0-22,0))
End stop	Start	100 500 mind 150	mind. 85,0 35,0-69,0)

Angle to the stop-plate	Pre-setting dimensions
$ \frac{Pump}{a} = 25 \pm 4^{\circ} $ $ \beta = 40 \pm 8^{\circ} $ $ \gamma = 30 - 8^{\circ} $ $ \delta = 60 \pm 8^{\circ} $	Pump Dimension IV = 1,5 mm Dimension V = - mm Dimension I = 7,0 mm Dimension II = 14,0 mm Dimension III = 35,8 mm

WPP 001/4 IHC 3,9 a

3. Edition

VA 4/100 H 1050 BR 12

0 460 304 048

BR 12 - 3 '0.460 304 049 BR 12 - 7 0 460 304 142

Nozzle-and-holder assembly 1 688 901 020 (172+3 bar) Setting of the pointer at a stroke of 1 mm in relation to outlet "A".

Pre-stroke setting

0,5 mm

supersedes 5.77

company IHC

engine XDD 239

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

Test intructions and Test Equipment

VDT-WPP 161/4 B

Pre-setting see reverse side

			Pr	e-setting see revers	se side
1. Settings	rev/min	Settings		Charge-air press kp/cm ²	Difference in delivery cm ²
1.1 Timing device travel	600	8,1-9,1	mm		
1.2 Supply pump pressure	600	4,5-5,0	kp/cm²		
1.3 Full-load delivery without charge-air pressure	800	64,0-65,0	cm ³ /1000 strokes		2,5
Full-load delivery with charge-air pressure			cm ³ /1000 strokes		
1.4 Idle speed regulation	250	17,5-23,5	cm ³ /1000 strokes		3,0
1.5 Start 196 bar	100	mind. 85	cm ³ /1000 strokes	*	
1.6 Full-load speed regulation	1100	41,0-49,0	cm ^S /1000 strokes		

2. Test Sp	ecificatio					
2.1 Timing device	rev/min	150-300(120-	330)	600		830-980
	mm	Start	(7,8-9,4)	13,	,7-14,4(13,4-14,7)
2.2 Supply pump	rev/min	100		600		1050
	kp/cm²	1,6-2,1(1,4-	2,3) 4	,2-5,2)	6	,2-6,7(6,0-6,9)
Overflow delivery	rev/min	500				1000
Overnow delivery	cm ³ /10 s	mind. 25			(55-125(40-140)
2.3 Fuel deliveries	<u> </u>	<u> </u>				
Speed control lever	Delivery lever	rev/min	cm ³ /1000 strok	es		Charge-air pressure kp/cm ³
End stop	Full	1110-1160 [°] (1090-1180) 1100 1030 800 500	0 66,0-69, 57,0-60,	(63,5-6	70,0) 55,5)	
	Stop	1050	0			
Idle stop	Full	310-360 (290-380) 250	0	(16,5-2	24,5)	
End stop	Start	100 mind. 150	mind. 85			

L19

Angle to the stop-plate	Pre-setting dimensions
Pump $a = 25 \pm 4^{\circ}$ $b = 40 \pm 8^{\circ}$ $c = 30 - 8^{\circ}$ $c = 60 \pm 8^{\circ}$	Pump Dimension IV = 0,5 mm Dimension V = - mm Dimension I = 7,0 mm Dimension II = 14,0 mm Dimension III = 35,8 mm

WPP 001/4 IHC 5,8 b

3. Edition

VA 6/100 H 1100 BR 36 0 460 306 038

6.67 supersedes IHC company D 358 engine

Nozzle-and-holder assembly 1 688 901 020 (172 + 3 bar)

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers Test Intructions and Test Equipment

VDT-WPP 161/4 B Pre-setting see reverse side

0.3 mm Pre-stroke setting Plunger lift of 1,0 mm related to outlet "A"

	•					
1.	Settings	rev/min	Settings		Charge-air press kp/cm²	Difference in delivery cm ³
1,1	Timing device travel	700	5,3-6,3	mm		
12	Supply pump pressure	700	5,4-5,9	kp/cm²		
1,3	Full-load delivery without charge-air pressure	800	70,0-71,0	cm ³ /1000 strokes		2,5
	Full-load delivery with charge-air pressure			cm ³ /1000 strokes		
14	Idle speed regulation	250	17,0-23,0	cm ³ /1000 strokes		3,0
15	Start	100	mind.90,0	cm ³ /1000 strokes		
16	Full-load speed regulation	1200	26,0-34,0	cm ³ /1000 strokes		

2. Test Sp	ecification	ns Checking values 350-500 (320-	s in brackets 530)	700		940-1100
2.1 Timing device	mm rev/min	Start			9,7-	-10,4(9,4-10,7)
2 2 Supply pump Overflow delivery	rev/min kp/cm ² rev/min cm ³ /10 s	100 1,1-1,6(0,9- 500 mind. 25		700 (5,2-6,1) 1000 55-125(40-1		1100 -7,4(6,7-7,6)
23 Fuel deliveries						
Speed control lever	Delivery lever	rev/min	cm ³ /1000 stro	kes		Charge-air pressure kp/cm ²
End stop	Full	1270-1320 (1250-1340) 1250 1080 800 500	0 71,0-74 65,0-68	(25,0- ,0 (70,0- (69,5- ,0 (64,0-	35,0) 75,0) 71,5) 69,0)	
	Stop	1100	0			
Idle stop	Full	370-450 (350-470) 250	0	(16,0-	-24,0)	
End stop	Start	100 500 mind.150	mind.90 max. 55		,	·

Angle to the stop-plate	Pre-setting dimensions	
Pump $\alpha = 25 \pm 4^{\circ}$ $\beta = 30 \pm 8^{\circ}$ $\gamma = 30 - 8^{\circ}$ $\delta = 60 \pm 8^{\circ}$	Pump Dimension IV = 4,0 mm Dimension V = - mm	